**SAFETY DATA SHEET**

**TUNEL Dilution Buffer**

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>Date of last issue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>02-16-2016</td>
<td>11-09-2015</td>
</tr>
</tbody>
</table>

**SECTION 1. IDENTIFICATION**

Product name : TUNEL Dilution Buffer

Mat.-No./ Genisys-No. : 11966006001

**Manufacturer or supplier’s details**

Company name of supplier : Roche Diagnostics

Address : 9115 Hague Road

        : 46250 Indianapolis IN

Telephone : 1-800-428-5074

Emergency telephone: In case of emergencies: CHEMTREC

        : 1-800-424-9300 (U.S. or Canada)

        : 1-703-527-3887 (International)

**Recommended use of the chemical and restrictions on use**

Restrictions on use : For professional users only.

**SECTION 2. HAZARDS IDENTIFICATION**

**GHS Classification**

The product is a kit consisting of individual ingredients. The classification of the ingredients can be obtained from section 3. Section Label elements contains the resulting labelling for the kit

**GHS label elements**

Hazard pictograms : ![Warning Symbol]

Signal Word : Danger

Hazard Statements : H350 May cause cancer.

Precautionary Statements : **Prevention:** P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:** P308 + P313 IF exposed or concerned: Get medical advice/ attention.

**Storage:** P405 Store locked up.

**Disposal:** P501 Dispose of contents/ container to an approved waste disposal plant.
SAFETY DATA SHEET

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Version 1.2
Revision Date: 02-16-2016
Date of last issue: 11-09-2015
Date of first issue: 10-28-2015

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Dilution Buffer

GHS Classification
Carcinogenicity Category 1A
H350: May cause cancer.

Hazardous ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dimethylarsinate</td>
<td>124-65-2</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice
Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled
Call a physician or poison control center immediately.
Move to fresh air.
If unconscious place in recovery position and seek medical advice.

In case of skin contact
If on skin, rinse well with water.

In case of eye contact
Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed
No information available.

Notes to physician
The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circ-
SECTION 5. FIRE FIGHTING MEASURES

Unsuitable extinguishing media: High volume water jet

Specific hazards during fire fighting: Do not allow run-off from fire fighting to enter drains or water courses.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Ensure adequate ventilation. Refer to protective measures listed in sections 7 and 8.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: Normal measures for preventive fire protection.

Advice on safe handling: Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage: 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. Electrical installations / working materials must comply with the technological safety standards.

Technical: See label, package insert or internal guidelines.
SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Dilution Buffer

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dimethylarsinate</td>
<td>124-65-2</td>
<td>TWA</td>
<td>0.5 mg/m³ (Arsenic)</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.01 mg/m³ (Arsenic)</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.5 mg/m³ (Arsenic)</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>0.01 mg/m³ (Arsenic)</td>
<td>OSHA CARC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>0.002 mg/m³ (Arsenic)</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>0.01 mg/m³ (Arsenic)</td>
<td>CAL PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>0.2 mg/m³ (Arsenic)</td>
<td>CAL PEL</td>
</tr>
</tbody>
</table>

Engineering measures: No data available

Personal protective equipment

Respiratory protection: In the case of vapor formation use a respirator with an approved filter.

Hand protection

Material: Protective gloves

Remarks: Wear appropriate protective gloves to prevent skin contact. Replace torn or punctured gloves promptly.

Eye protection: Eye wash bottle with pure water

Tightly fitting safety goggles

Skin and body protection: Impervious clothing

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: When using do not eat or drink.

When using do not smoke.

Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Dilution Buffer

Appearance: liquid
## TUNEL Dilution Buffer

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>clear, colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>7.2 - 7.4, (20 °C)</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>does not flash</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility/ies</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>completely miscible</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
</tbody>
</table>

### SECTION 10. STABILITY AND REACTIVITY

**Reactivity**: No dangerous reaction known under conditions of normal use.

**Chemical stability**: Stable under normal conditions.

**Possibility of hazardous reactions**: No dangerous reaction known under conditions of normal use. No decomposition if stored and applied as directed.
Conditions to avoid : No data available
Incompatible materials : Strong oxidizing agents
Hazardous decomposition products : Arsenic oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Dilution Buffer

Acute toxicity
Not classified based on available information.

Ingredients:
Sodium dimethylarsinate:
Acute oral toxicity : LD50 Oral (Rat): 2,600 mg/kg
LD50 Oral (Mouse): 4 mg/kg

Skin corrosion/irritation
Not classified based on available information.

Ingredients:
Sodium dimethylarsinate:
Remarks: This information is not available.

Serious eye damage/eye irritation
Not classified based on available information.

Ingredients:
Sodium dimethylarsinate:
Remarks: This information is not available.

Respiratory or skin sensitization
Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
May cause cancer.

IARC
Sodium dimethylarsinate 124-65-2

OSHA
OSHA specifically regulated carcinogen
Sodium dimethylarsinate 124-65-2

NTP
Known to be human carcinogen
Sodium dimethylarsinate 124-65-2
Reproductive toxicity
Not classified based on available information.

**STOT-single exposure**
Not classified based on available information.

**Ingredients:**
- **Sodium dimethylarsinate:**
  - Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT-repeated exposure**
Not classified based on available information.

**Ingredients:**
- **Sodium dimethylarsinate:**
  - Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Aspiration toxicity**
Not classified based on available information.

**Ingredients:**
- **Sodium dimethylarsinate:**
  - No data available

---

**SECTION 12. ECOLOGICAL INFORMATION**

**Dilution Buffer**

**Ecotoxicity**

**Ingredients:**
- **Sodium dimethylarsinate:**
  - Ecotoxicology Assessment
    - Toxicity Data on Soil: Not expected to adsorb on soil.
    - Other organisms relevant to the environment: No data available

**Persistence and degradability**
No data available

**Bioaccumulative potential**

**Ingredients:**
- **Sodium dimethylarsinate:**
  - Partition coefficient: n-octanol/water: Remarks: No data available
Mobility in soil
No data available

Other adverse effects

Ingredients:
Sodium dimethylarsinate:

Additional ecological information:
Very toxic to aquatic life with long lasting effects.
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues:
The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging:
Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG
UN number: UN 1556
(Sodium Cacodylate Solution)
Class: 6.1
Packing group: III
Labels: 6.1

IATA-DGR
UN/ID No.: UN 1556
Proper shipping name: Arsenic compound, liquid, n.o.s.
(Sodium Cacodylate Solution)
Class: 6.1
Packing group: III
Labels: 
Packing instruction (cargo aircraft): 663
Packing instruction (passenger aircraft): 655

IMDG-Code
UN number: UN 1556
Proper shipping name: ARSENIC COMPOUND, LIQUID, N.O.S. (Sodium Caco-
SECTION 15. REGULATORY INFORMATION

Dilution Buffer

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dimethylarsinate</td>
<td>124-65-2</td>
<td>100</td>
<td>4464</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazards: Chronic Health Hazard

SARA 302: The following components are subject to reporting levels established by SARA Title III, Section 302:

Sodium dimethylarsinate 124-65-2 2.2399 %

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:

Sodium dimethylarsinate 124-65-2 2.2399 %

Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Sodium dimethylarsinate 124-65-2 2.2399 %
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dimethylarsinate</td>
<td>124-65-2</td>
<td>2.2399 %</td>
</tr>
</tbody>
</table>

US State Regulations

Massachusetts Right To Know

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dimethylarsinate</td>
<td>124-65-2</td>
<td>1 - 5 %</td>
</tr>
</tbody>
</table>

Pennsylvania Right To Know

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>90 - 100 %</td>
</tr>
<tr>
<td>Sodium dimethylarsinate</td>
<td>124-65-2</td>
<td>1 - 5 %</td>
</tr>
</tbody>
</table>

New Jersey Right To Know

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>90 - 100 %</td>
</tr>
<tr>
<td>Sodium dimethylarsinate</td>
<td>124-65-2</td>
<td>1 - 5 %</td>
</tr>
</tbody>
</table>

California Prop. 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dimethylarsinate</td>
<td>124-65-2</td>
</tr>
</tbody>
</table>

The ingredients of this product are reported in the following inventories:

- **CH INV**: On the inventory, or in compliance with the inventory
- **TSCA**: On TSCA Inventory
- **DSL**: All components of this product are on the Canadian DSL
- **AICS**: On the inventory, or in compliance with the inventory
- **NZIoC**: On the inventory, or in compliance with the inventory
- **ENCS**: Not in compliance with the inventory
  - Water
  - Sodium dimethylarsinate
  - Tris hydrochloride
- **ISHL**: Not in compliance with the inventory
  - Sodium dimethylarsinate
  - Tris hydrochloride
- **KECI**: On the inventory, or in compliance with the inventory
- **PICCS**: On the inventory, or in compliance with the inventory
- **IECSC**: Not in compliance with the inventory
  - Sodium dimethylarsinate
TSCA list
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**Dilution Buffer**

**GHS label elements**

Hazard pictograms:

![Hazard Pictogram]

Signal Word: Danger

Hazard Statements: H350 May cause cancer.

Precautionary Statements:

**Prevention:**
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.

**Storage:**
- P405 Store locked up.

**Disposal:**
- P501 Dispose of contents/ container to an approved waste disposal plant.

**SECTION 16. OTHER INFORMATION**

**Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50
Further information

Dilution Buffer

NFPA:  

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS III:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>0*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABILITY</td>
<td>1</td>
</tr>
<tr>
<td>PHYSICAL HAZARD</td>
<td>0</td>
</tr>
</tbody>
</table>

Revision Date : 02-16-2016

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8