

05/02/2016

### Kit Components

Product code	Description
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<b>NEL742001KT</b>	<b>TSA Plus TMR System, for 50-150 Slides</b>
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Components:

FP1135	DNP Amplification Diluent
FP1169	TMR Amplification reagent

## 1 Identification

- **Product identifier**
- **Trade name:** DNP Amplification Diluent
- **Product number:** FP1135
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
PerkinElmer Inc  
549 Albany st  
Boston, MA 02118
- **Information department:**  
US Technical Support  
800-762-4000
- **Emergency telephone number:**  
If inside USA, call CHEMTREC at 1-800-424-9300  
If outside USA, call CHEMTREC at 1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Repr. 1 H360 May damage fertility or the unborn child.
- **Classification system:**  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **Additional information:** For the wording of the listed H phrases refer to section 16.

- 
- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**



GHS08

- **Signal word** *Danger*
- **Hazard statements**  
*May damage fertility or the unborn child.*
- **Precautionary statements**  
*Wear protective gloves/protective clothing/eye protection/face protection.*  
*Obtain special instructions before use.*  
*Do not handle until all safety precautions have been read and understood.*  
*IF exposed or concerned: Get medical advice/attention.*  
*Store locked up.*  
*Dispose of contents/container in accordance with local/regional/national/international regulations.*

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# Material Safety Data Sheet

acc. to ISO 11014

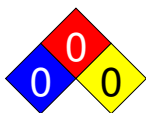
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Trade name: DNP Amplification Diluent

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 0  
Reactivity = 0

### 3 Composition/information on ingredients

- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

1303-96-4	Disodium tetraborate, decahydrate	<1.0%
11113-50-1	boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight	<1.0%

- **Additional Components**

7647-14-5	sodium chloride	10-25%
7732-18-5	Water	75-100%

### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

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**Trade name: DNP Amplification Diluent**

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See Section 13 for disposal information.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.  
At this time, the remaining constituent has no known exposure limits.

### 1303-96-4 Disodium tetraborate, decahydrate (<1.0%)

REL	Long-term value: 5 mg/m <sup>3</sup>
TLV	Short-term value: 6* mg/m <sup>3</sup>
	Long-term value: 2* mg/m <sup>3</sup>
	*as inhalable fraction

- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Suitable respiratory protective device recommended.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Goggles recommended during refilling.

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## 9 Physical and chemical properties

· <b>Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
Form:	Fluid
Color:	According to product specification
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.
· <b>pH-value:</b>	N/A
· <b>Change in condition</b>	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)
· <b>Flash point:</b>	Not applicable.
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	
Decomposition temperature:	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
Lower:	Not determined.
Upper:	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with</b>	
Water:	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b> Not determined.	
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Organic solvents:	0.0 %
Water:	84.6 %
Solids content:	14.8 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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**Trade name: DNP Amplification Diluent**

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- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:** N/A
- **Other information:** N/A
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Must be specially treated adhering to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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## 14 Transport information

· UN-Number	Void
· ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	Void
· ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· ADR, IMDG, IATA	Void
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	Void

## 15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture		
· Sara		
· Section 355 (extremely hazardous substances):		
None of the ingredients is listed.		
· Section 313 (Specific toxic chemical listings):		
None of the ingredients is listed.		
· TSCA (Toxic Substances Control Act):		
All ingredients are listed.		
· Proposition 65		
· Chemicals known to cause cancer:		
None of the ingredients is listed.		
· Chemicals known to cause reproductive toxicity for females:		
None of the ingredients is listed.		
· Chemicals known to cause reproductive toxicity for males:		
None of the ingredients is listed.		
· Chemicals known to cause developmental toxicity:		
None of the ingredients is listed.		
· Carcinogenic categories		
· EPA (Environmental Protection Agency)		
1303-96-4	Disodium tetraborate, decahydrate	I (oral)
11113-50-1	boric acid, crude natural, containing not more than 85 per cent of H <sub>3</sub> BO <sub>3</sub> calculated on the dry weight	I (oral)

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· **TLV (Threshold Limit Value established by ACGIH)**

1303-96-4	Disodium tetraborate, decahydrate	A4
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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

· **Date of preparation / last revision** 05/02/2016 / -

· **Abbreviations and acronyms:**

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

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Repr. 1: Reproductive toxicity, Hazard Category 1



## 1 Identification

- **Product identifier**
- **Trade name:** *TMR Amplification reagent*
- **Product number:** *FP1169*
- **CAS Number:**  
*5122-99-6*
- **Application of the substance / the mixture** *Laboratory chemicals*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*PerkinElmer Inc*  
*549 Albany st*  
*Boston, MA 02118*
- **Information department:**  
*US Technical Support*  
*800-762-4000*
- **Emergency telephone number:**  
*If inside USA, call CHEMTREC at 1-800-424-9300*  
*If outside USA, call CHEMTREC at 1-703-527-3887*

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
*Acute Tox. 3 H301 Toxic if swallowed.*  
*Skin Irrit. 2 H315 Causes skin irritation.*  
*Eye Irrit. 2A H319 Causes serious eye irritation.*  
*STOT SE 3 H335 May cause respiratory irritation.*



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- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
*Harmful*  
*Harmful if swallowed.*

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- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
*Irritant*  
*Irritating to eyes, respiratory system and skin.*
- **Information concerning particular hazards for human and environment:** *Not applicable.*
- **Additional information:** *For the wording of the listed H phrases refer to section 16.*

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- **Label elements**
- **GHS label elements**  
*The substance is classified and labeled according to the Globally Harmonized System (GHS).*
- **Hazard pictograms**  
   
GHS06 GHS07
- **Signal word** *Danger*
- **Hazard-determining components of labeling:**  
*4-IODOPHENYLBORONIC ACID*
- **Hazard statements**  
*Toxic if swallowed.*  
*Causes skin irritation.*  
*Causes serious eye irritation.*

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**Trade name: TMR Amplification reagent**

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May cause respiratory irritation.

· **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves.

Wear eye protection / face protection.

**IF SWALLOWED:** Immediately call a POISON CENTER/ doctor.

**If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

5122-99-6 4-IODOPHENYLBORONIC ACID

### 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Immediately call a doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **Special hazards arising from the substance or mixture** No further relevant information available.

· **Advice for firefighters**

· **Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.

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**Trade name: TMR Amplification reagent**

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- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **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.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from food and beverages.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Respiratory protection:**  
In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.  
Suitable respiratory protective device recommended.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

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- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

**Form:** Fluid

**Color:** Not determined.

- **Odor:** Characteristic

- **Odor threshold:** Not determined.

- **pH-value:** N/A

- **Change in condition**

**Melting point/Melting range:** Undetermined.

**Boiling point/Boiling range:** Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:**

**Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

- **Vapor pressure:** Not determined.

- **Density:** Not determined.

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

**Water:** Not miscible or difficult to mix.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

**Dynamic:** Not determined.

**Kinematic:** Not determined.

**Organic solvents:** 0.0 %

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**Trade name: TMR Amplification reagent**

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· **Other information** *No further relevant information available.*

## 10 Stability and reactivity

- **Reactivity** *No further relevant information available.*
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
- **Possibility of hazardous reactions** *No dangerous reactions known.*
- **Conditions to avoid** *No further relevant information available.*
- **Incompatible materials:** *No further relevant information available.*
- **Hazardous decomposition products:** *No dangerous decomposition products known.*

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** *Irritant to skin and mucous membranes.*
- **on the eye:** *Irritating effect.*
- **Sensitization:** *No sensitizing effects known.*
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)**
- Substance is not listed.
- **NTP (National Toxicology Program)**
- Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)**
- Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** *No further relevant information available.*
- **Persistence and degradability** *No further relevant information available.*
- **Behavior in environmental systems:**
- **Bioaccumulative potential** *No further relevant information available.*
- **Mobility in soil** *No further relevant information available.*
- **Ecotoxicological effects:** *N/A*
- **Other information:** *N/A*
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*
- **Other adverse effects** *No further relevant information available.*

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Trade name: TMR Amplification reagent

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## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Must be specially treated adhering to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

· <b>UN-Number</b>	
· <b>ADR</b>	UN3287
· <b>UN proper shipping name</b>	
· <b>ADR</b>	3287 Toxic liquid, inorganic, n.o.s.
· <b>Transport hazard class(es)</b>	
· <b>ADR</b>	
	
· <b>Class</b>	6.1 Toxic substances
· <b>Packing group</b>	
· <b>ADR</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Warning: Toxic substances
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 3287 TOXIC LIQUID, INORGANIC, N.O.S., 6.1, III

## 15 Regulatory information

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

· <b>Section 355 (extremely hazardous substances):</b>	
	Substance is not listed.
· <b>Section 313 (Specific toxic chemical listings):</b>	
	Substance is not listed.
· <b>TSCA (Toxic Substances Control Act):</b>	
	Substance is not listed.

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· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

· **Date of preparation / last revision** 05/02/2016 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 3: Acute toxicity, Hazard Category 3

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3