SECTION 1: Kit identification

1.1. Kit identifier

Product name : Primary Amino Nitrogen Assay Kit (PANOPA)
Product code : K-PANOPA

1.2. Details of the supplier of the KIT safety information sheet

Megazyme
Bray Business Park
A98 YV29 Bray - Ireland
T +353 12861220 - F +353 12861264
cs@megazyme.com - www.megazyme.com

SECTION 2: General information

This product is a Kit which consists of several independently packaged components

This Kit should be handled in accordance with good laboratory practices and appropriate personal protective equipment should be used

SECTION 3: Kit contents

<table>
<thead>
<tr>
<th>Name</th>
<th>General description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 1)</td>
<td>Buffer</td>
<td>1</td>
<td>pcs (pieces)</td>
<td>Eye Irrit. 2, H319, Repr. 1B, H360</td>
</tr>
<tr>
<td>Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 2)</td>
<td>Reagent</td>
<td>1</td>
<td>pcs (pieces)</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319, Skin Sens. 1, H317, Aquatic Chronic 3, H412</td>
</tr>
</tbody>
</table>

No substance or mixture included in the following Kit components is hazardous according to Regulation (EC) No. 1272/2008 [CLP] and therefore the requirements of Regulation (EU) 2015/830 do not apply

<table>
<thead>
<tr>
<th>Name</th>
<th>General description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 3)</td>
<td>Reagent</td>
<td>1</td>
<td>pcs (pieces)</td>
</tr>
</tbody>
</table>

SECTION 4: General advice

No data available

SECTION 5: Safe handling advice

Environmental precautions: Avoid release to the environment
Storage conditions: Store in a well-ventilated place. Keep cool.
Precautions for safe handling: Ensure good ventilation of the work station, Wear personal protective equipment

SECTION 6: First aid measures

First-aid measures after eye contact: Rinse eyes with water as a precaution
First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water
Other medical advice or treatment: Treat symptomatically

SECTION 7: Fire fighting measures

Protection during firefighting: Do not attempt to take action without suitable protective equipment, Self-contained breathing apparatus
## Hazardous decomposition products in case of fire

| Complete protective clothing | Toxic fumes may be released |

## SECTION 8: Other information

No data available
**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

1.1. Product identifier

- **Product form**: Mixture
- **Product name**: Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 3)
- **Product code**: K-PANOPA (Bottle 3)

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- **Industrial/Professional use spec**: For professional use only
- **Use of the substance/mixture**: Use as laboratory reagent

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Megazyme
Bray Business Park
A96 YV29 Bray - Ireland
T +353 12861220 - F +353 12861264
cs@megazyme.com - www.megazyme.com

1.4. Emergency telephone number

**Emergency number**: +353 12861220 [9 am to 5 pm GMT - Monday to Friday]

**SECTION 2: Hazards identification**

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

**Adverse physicochemical, human health and environmental effects**

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

- **EUH-statements**: EUH032 - Contact with acids liberates very toxic gas.

**Labelling according to: exemption for inner packaging where the contents do not exceed 10ml**

No labelling required

2.3. Other hazards

No additional information available

**SECTION 3: Composition/information on ingredients**

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of REACH annex II

**SECTION 4: First aid measures**

4.1. Description of first aid measures

- **First-aid measures after inhalation**: Remove person to fresh air and keep comfortable for breathing.
- **First-aid measures after skin contact**: Wash skin with plenty of water.
- **First-aid measures after eye contact**: Rinse eyes with water as a precaution.
- **First-aid measures after ingestion**: Call a poison center or a doctor if you feel unwell.
4.2. Most important symptoms and effects, both acute and delayed
No additional information available

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Take up liquid spill into absorbent material.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Protective gloves

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>Permeation</th>
<th>Thickness (mm)</th>
<th>Penetration</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable</td>
<td>Nitrile rubber (NBR)</td>
<td>3 (&gt; 60 minutes)</td>
<td>2 (&lt; 1.5)</td>
<td>EN 374-2</td>
<td></td>
</tr>
</tbody>
</table>

Eye protection:
Safety glasses
Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 3)
Safety Data Sheet
according to Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Use</th>
<th>Characteristics</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety glasses</td>
<td>Droplet</td>
<td>With side shields</td>
</tr>
</tbody>
</table>

**Skin and body protection:**
Wear suitable protective clothing

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab coat</td>
<td></td>
</tr>
</tbody>
</table>

**Respiratory protection:**
In case of insufficient ventilation, wear suitable respiratory equipment

<table>
<thead>
<tr>
<th>Device</th>
<th>Filter type</th>
<th>Condition</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust mask</td>
<td>Type P1</td>
<td>Protection for Liquid particles</td>
<td>EN 143, EN 149</td>
</tr>
</tbody>
</table>

**Environmental exposure controls:**
Avoid release to the environment.

**SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties:
- Physical state: Liquid
- Colour: No data available on colour.
- Odour: None.
- Odour threshold: No data available.
- pH: No data available.
- Relative evaporation rate (butylacetate=1): No data available.
- Melting point: Not applicable.
- Freezing point: No data available.
- Boiling point: No data available.
- Flash point: No data available.
- Auto-ignition temperature: No data available.
- Decomposition temperature: No data available.
- Flammability (solid, gas): Not applicable.
- Vapour pressure: No data available.
- Relative vapour density at 20 °C: No data available.
- Relative density: No data available.
- Solubility: Soluble in water.
- Log Pow: No data available.
- Viscosity, kinematic: No data available.
- Viscosity, dynamic: No data available.
- Explosive properties: No data available.
- Oxidising properties: No data available.
- Explosive limits: No data available.

9.2. Other information
No additional information available.

**SECTION 10: Stability and reactivity**

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
Contact with acids liberates very toxic gas.
10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
Acids.

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - general</td>
<td>The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods: Dispose of contents/container in accordance with licensed collector’s sorting instructions.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

<table>
<thead>
<tr>
<th>ADR</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>UN number</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.2</td>
<td>UN proper shipping name</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.3</td>
<td>Transport hazard class(es)</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 3)
Safety Data Sheet

according to Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>ADR</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.4</td>
<td>Packing group</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.5</td>
<td>Environmental hazards</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

No supplementary information available

14.6. Special precautions for user

- Overland transport
  Not applicable

- Air transport
  Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

| EUH032 | Contact with acids liberates very toxic gas. |

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 2)
Safety Data Sheet
according to Regulation (EU) 2015/830
Date of issue: 05/06/2013 Revision date: 04/01/2018 Supersedes: 16/03/2017 Version: 1.3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Mixture
Product name: Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 2)
Product code: K-PANOPA (Bottle 2)

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
Industrial/Professional use spec: For professional use only
Use of the substance/mixture: Use as laboratory reagent

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
Megazyme
Bray Business Park
A98 YV29 Bray - Ireland
T +353 12861220 - F +353 12861264
cs@megazyme.com - www.megazyme.com

1.4. Emergency telephone number
Emergency number: +353 12861220 [9 am to 5 pm GMT - Monday to Friday]

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Skirn corrosion/irritation, Category 2: H315
Serious eye damage/eye irritation, Category 2: H319
Skin sensitisation, Category 1: H317
Hazardous to the aquatic environment — Chronic Hazard, Category 3: H412
Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects
Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful to aquatic life with long lasting effects.

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
Hazard pictograms (CLP):

Signal word (CLP): Warning
Hazardous ingredients: phthalaldehyde, o-Phthalaldehyde, OPA, 1,2-Benzenedicarboxaldehyde
Hazard statements (CLP):
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP):
P261 - Avoid breathing mist, spray, vapours.
P264 - Wash hands thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear eye protection, protective clothing, protective gloves
P302+P352 - IF ON SKIN: Wash with plenty of water.
Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 2)
Safety Data Sheet

Labelling according to: exemption for packages of a capacity of 125ml or less

Hazard pictograms (CLP):

Signal word (CLP): Warning
Hazardous ingredients: phthalaldehyde, o-Phthalaldehyde, OPA, 1,2-Benzenedicarboxaldehyde
Hazard statements (CLP):
H317 - May cause an allergic skin reaction.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP):
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - IF ON SKIN: Wash with plenty of water.
P321 - Specific treatment (see supplemental first aid instruction on this label)
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>phthalaldehyde, o-Phthalaldehyde, OPA, 1,2-Benzenedicarboxaldehyde</td>
<td>(CAS-No.) 643-79-8 (EC-No.) 211-402-2</td>
<td>1 - 5</td>
<td>Flam. Sol. 1, H228 Acute Tox. 3 (Oral), H301 Skin Irrit. 1C, H314 Skin Sens. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general: Get medical advice/attention if you feel unwell.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects after skin contact: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact: Eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 2)
Safety Data Sheet

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition products in case of fire:
Toxic fumes may be released.

5.3. Advice for firefighters
Protection during firefighting:
Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Emergency procedures:
Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe mist, spray, vapours.

6.1.2. For emergency responders
Protective equipment:
Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up:
Take up liquid spill into absorbent material.
Other information:
Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling:
Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment. Do not breathe mist, spray, vapours.
Hygiene measures:
Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions:
Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Protective gloves

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>Permeation</th>
<th>Thickness (mm)</th>
<th>Penetration</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable gloves</td>
<td>Nitrile rubber (NBR)</td>
<td>3 (&gt; 60 minutes)</td>
<td>2 (&lt; 1.5)</td>
<td>EN 374-2</td>
<td></td>
</tr>
</tbody>
</table>

Eye protection:
Safety glasses

<table>
<thead>
<tr>
<th>Type</th>
<th>Use</th>
<th>Characteristics</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety glasses</td>
<td>Droplet</td>
<td>With side shields</td>
<td>EN 166</td>
</tr>
</tbody>
</table>

Skin and body protection:
Wear suitable protective clothing

15/03/2018 EN (English) 10/19
Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 2)
Safety Data Sheet
according to Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab coat</td>
<td></td>
</tr>
</tbody>
</table>

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

<table>
<thead>
<tr>
<th>Device</th>
<th>Filter type</th>
<th>Condition</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust mask</td>
<td>Type P1</td>
<td>Protection for Liquid particles</td>
<td>EN 143, EN 149</td>
</tr>
</tbody>
</table>

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state: Liquid
- Colour: No data available on colour.
- Odour: None.
- Odour threshold: No data available
- pH: No data available
- Relative evaporation rate (butylacetate=1): No data available
- Melting point: Not applicable
- Freezing point: No data available
- Boiling point: No data available
- Flash point: No data available
- Auto-ignition temperature: No data available
- Decomposition temperature: No data available
- Flammability (solid, gas): Not applicable
- Vapour pressure: No data available
- Relative vapour density at 20 °C: No data available
- Relative density: No data available
- Solubility: Soluble in water.
- Log Pow: No data available
- Viscosity, kinematic: No data available
- Viscosity, dynamic: No data available
- Explosive properties: No data available
- Oxidising properties: No data available
- Explosive limits: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available
10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral): Not classified
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified
Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitisation: May cause an allergic skin reaction.
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: Harmful to aquatic life with long lasting effects. Harmful to aquatic life.
Acute aquatic toxicity: Not classified
Chronic aquatic toxicity: Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability
phthalaldehyde, o-Phthalaldehyde, OPA, 1,2-Benzenedicarboxaldehyde (643-79-8)
Persistence and degradability: Biodegradability in water: no data available.
ThOD: 2.03 g O₂/g substance

12.3. Bioaccumulative potential
phthalaldehyde, o-Phthalaldehyde, OPA, 1,2-Benzenedicarboxaldehyde (643-79-8)
Bioaccumulative potential: Not established.

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods: Dispose of contents/container in accordance with licensed collector’s sorting instructions.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

<table>
<thead>
<tr>
<th>ADR</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.2. UN proper shipping name</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.4. Packing group</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 2)
Safety Data Sheet
according to Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>ADR</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.5. Environmental hazards</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.6. Special precautions for user</td>
<td>- Overland transport Not applicable</td>
</tr>
<tr>
<td>- Air transport Not applicable</td>
<td></td>
</tr>
<tr>
<td>14.7. Transport in bulk according to Annex II of Marpol and the IBC Code</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations
No additional information available

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Oral)</th>
<th>Acute toxicity (oral), Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment — Acute Hazard, Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 1</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Category 1</td>
</tr>
<tr>
<td>Flam. Sol. 1</td>
<td>Flammable solids, Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1C</td>
<td>Skin corrosion/irritation, Category 1C</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>Skin sensitisation, Category 1</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>Specific target organ toxicity — Repeated exposure, Category 2</td>
</tr>
<tr>
<td>H228</td>
<td>Flammable solid.</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H373</td>
<td>May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Primary Amino Nitrogen Assay Kit (PANOPA) (Bottle 1)
Product code : K-PANOPA (Bottle 1)

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Use of the substance/mixture : Use as laboratory reagent

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Megazyme
Bray Business Park
A98 YV29 Bray - Ireland
T +353 12861220 - F +353 12861264
cs@megazyme.com - www.megazyme.com

1.4. Emergency telephone number

Emergency number : +353 12861220 [9 am to 5 pm GMT - Monday to Friday]

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye irritation, Category H319
Reproductive toxicity, Category 1B H360

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

May damage fertility or the unborn child. Causes serious eye irritation.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) : GHS07, GHS08

Signal word (CLP) : Danger

Hazardous ingredients : Disodium tetraborate, anhydrous, borax, boric acid

Hazard statements (CLP) : H319 - Causes serious eye irritation
H360 - May damage fertility or the unborn child.

Precautionary statements (CLP) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P264 - Wash hands thoroughly after handling.
P280 - Wear eye protection, protective clothing, protective gloves
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
Labelling according to: exemption for inner packaging where the contents do not exceed 10ml

Hazard pictograms (CLP):

Hazardous ingredients: Disodium tetraborate, anhydrous, borax, boric acid

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium tetraborate, anhydrous, borax, boric acid substance listed as REACH Candidate (Disodium tetraborate, anhydrous)</td>
<td>(CAS-No.) 1303-96-4, 1330-43-4, 12179-04-3 (EC-No.) 215-540-4</td>
<td>30 - 40</td>
<td>Eye Irrit. 2, H319 Repr. 1B, H360FD</td>
</tr>
<tr>
<td>SODIUM BENZOATE</td>
<td>(CAS-No.) 532-32-1 (EC-No.) 208-534-8</td>
<td>5 - 10</td>
<td>Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water.
First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after eye contact: Eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media


5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures: Only qualified personnel equipped with suitable protective equipment may intervene.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”. 
6.2. Environmental precautions
Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Mechanically recover the product. Notify authorities if product enters sewers or public waters.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Avoid contact with skin and eyes.
Hygiene measures: Separate working clothes from town clothes. Launder separately. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store locked up. Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Protective gloves

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>Permeation</th>
<th>Thickness (mm)</th>
<th>Penetration</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable gloves</td>
<td>Nitrile rubber (NBR)</td>
<td>3 (&gt; 60 minutes)</td>
<td>2 (&lt; 1.5)</td>
<td>EN 374-2</td>
<td></td>
</tr>
</tbody>
</table>

Eye protection:
Safety glasses

<table>
<thead>
<tr>
<th>Type</th>
<th>Use</th>
<th>Characteristics</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety glasses</td>
<td>Dust</td>
<td>With side shields</td>
<td>EN 166</td>
</tr>
</tbody>
</table>

Skin and body protection:
Wear suitable protective clothing

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab coat</td>
<td></td>
</tr>
</tbody>
</table>

Respiratory protection:
[In case of inadequate ventilation] wear respiratory protection.

<table>
<thead>
<tr>
<th>Device</th>
<th>Filter type</th>
<th>Condition</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust mask</td>
<td>Type P1</td>
<td>Protection for Solid particles</td>
<td>EN 143, EN 149</td>
</tr>
</tbody>
</table>
Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available on colour.</td>
</tr>
<tr>
<td>Odour</td>
<td>None.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information
11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
Carcinogenicity: Not classified
Reproductive toxicity: May damage fertility or the unborn child.
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Acute aquatic toxicity: Not classified
Chronic aquatic toxicity: Not classified

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>PBT criteria</th>
<th>vPvB criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium tetraborate, anhydrous, borax, boric acid (1303-96-4, 1330-43-4, 12179-04-3)</td>
<td>This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII</td>
<td>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII</td>
</tr>
</tbody>
</table>

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods: Dispose of contents/container in accordance with licensed collector’s sorting instructions.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

<table>
<thead>
<tr>
<th>ADR</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.2. UN proper shipping name</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.4. Packing group</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.5. Environmental hazards</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

14.6. Special precautions for user

- Overland transport
  Not applicable

- Air transport
  Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
  Not applicable
SECTION 15: Regulatory information

15.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains a substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: Disodium tetraborate, anhydrous (EC 215-540-4, CAS 1303-96-4, 1330-43-4, 12179-04-3)
Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irr. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>Repr. 1B</td>
<td>Reproductive toxicity, Category 1B</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H360</td>
<td>May damage fertility or the unborn child.</td>
</tr>
<tr>
<td>H360FD</td>
<td>May damage fertility. May damage the unborn child.</td>
</tr>
</tbody>
</table>

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.