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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Pack Name</th>
<th>PHOS 100</th>
<th>PHOS 250</th>
<th>PHOS 120</th>
<th>PHOS 220 XL-1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat. No.</td>
<td>BLT00047</td>
<td>BLT00048</td>
<td>XSYS0015</td>
<td>XSYS0093</td>
</tr>
<tr>
<td>Reagent 1</td>
<td>2×50 ml</td>
<td>1×250 ml</td>
<td>10×12 ml</td>
<td>10×22 ml</td>
</tr>
</tbody>
</table>

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

Diagnostic reagent for quantitative *in vitro* determination of Phosphorus in human serum, plasma or urine.

1.3 Details of the supplier of the safety data sheet

Name of manufacturer: Erba Lachema s.r.o.
Place of business: Brno, Karásek 1d, postcode 621 00, CZ
ID no: 26918846
Phone: +420 517 077 111
E-mail: msds@erbalachema.com

1.4 Emergency telephone number

Erba Lachema s.r.o.
Phone: +420 517 077 556 (*service only during business hours*)
**Toxicological Information Centre** (TIS), Na Bojišti 1, 128 01 Prague 2
Phone: +420 224 919 293 or +420 224 915 402 (*service available 24 hours a day*)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Reagent 1
**Classification according to Regulation (EC) No 1272/2008**
Eye Irrit. 2  H319
For a full text of H-statements see Section 16.

2.2 Label elements

Reagent 1

Pictogram: ! WARNING
Signal word: Warning
Hazard-determining components of labelling:
Triton X-100
Hazard statement(s):
H319 Causes serious eye irritation.
Precautionary statement(s):
P280 Wear eye protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
2.3 Other hazards
Reagent 1 is not classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances
The product is a mixture.

3.2 Mixtures
Reagent 1 contains following hazardous substances:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Content (% of weight)</th>
<th>CAS number</th>
<th>EC number</th>
<th>Index number</th>
<th>Reg. number</th>
<th>Specific Concentration limits, M-factors</th>
<th>Classification according to 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphuric acid</td>
<td>&lt;5.0</td>
<td>7664-93-9</td>
<td>231-639-5</td>
<td>016-020-00-8</td>
<td>016-020-00-8-8</td>
<td>Skin Corr. 1A; H314: C ≥ 15 %</td>
<td>Skin Corr. 1A</td>
</tr>
<tr>
<td>96 %*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2; H319: 5 % ≤ C &lt; 15 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2; H315: 5 % ≤ C &lt; 15 %</td>
<td></td>
</tr>
<tr>
<td>Triton X-100</td>
<td>&lt;1.0</td>
<td>9002-93-1</td>
<td></td>
<td></td>
<td></td>
<td>–</td>
<td>Acute Tox. 4</td>
</tr>
</tbody>
</table>

*) Substance with exposure limits (exposure limits are listed in Section 8.1)
For a full text of H-statements see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures
When working with the mixture, take care of personal hygiene and prevent contamination of work clothing and skin. If you have any doubts or when symptoms persist, seek medical attention.

Exposure by inhalation
Discontinue the exposure, remove casualty to fresh air, keep at rest and seek medical advice.

Exposure by contact with skin
After contact with skin, wash immediately with soap and water.

Exposure by contact with eyes
Rinse an open eye (hold eyelids with fingers) with plenty of water for about 15 minutes, transfer casualty to a specialist.

Exposure by ingestion
Rinse mouth with water, drink 1/2 l of lukewarm water, seek medical attention immediately, and do not induce vomiting.

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

4.3 Indication of any immediate medical attention and special treatment needed
No data available.
SECTION 5: Firefighting measures
The mixture is not flammable. The measure should be adapted to burning substances in the surrounding area.

5.1 Extinguishing media

Unsuitable extinguishing media:
For mixture no unsuitable extinguishing media are known.

5.2 Special hazards arising from the substance or mixture

None.

5.3 Advice for firefighters

Use breathing apparatus. Wear protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment, see Section 8. Observe the principles of work safety in chemical laboratories. Do not eat, drink or smoke.

6.2 Environmental precautions

Do not discharge into the drains, surface waters and groundwater.

6.3 Methods and material for containment and cleaning up

Absorb spilled agent with a suitable inert material (sand, earth, vapex) and store contaminated material in containers for collection of hazardous waste. For waste disposal, see Section 13.

6.4 Reference to other sections

See section 7, 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Observe the principles of work in laboratory. Observe the normal operating procedures for handling chemical substances and mixtures. Do not eat, drink or smoke. Use personal protective equipment, see Section 8.

7.2 Conditions for safe storage, including any incompatibilities

Store in dry and covered stores in tightly closed containers at a temperature between +2 °C and +8 °C.

7.3 Specific end use(s)

The kit is designed for in vitro diagnostic devices.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Control parameters of the mixture components according to Government Decree No 361/2007 Coll.

<table>
<thead>
<tr>
<th>CAS</th>
<th>Substance name</th>
<th>PEL</th>
<th>NPK-P</th>
<th>Note</th>
<th>Conversion factor for ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>mg/m³</td>
<td>mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7664-93-9</td>
<td>Sulphuric acid (mist)</td>
<td>0.05</td>
<td>–</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>7664-93-9</td>
<td>Sulphuric acid (SO₃)</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>–</td>
</tr>
</tbody>
</table>

PEL - Permissible exposure limits; NPK-P - the maximum permissible concentration; D - a significant penetration of the substance through the skin or a strong irritating effect on the skin during exposure; S - the substance has a sensitizing effect; P - serious late effects of the substance cannot be excluded; I - causes irritation of mucous membranes (eyes, respiratory system), resp. skin. * - the physico-chemical properties (e.g. explosiveness) are taken into account for NPK-P.

Exposure limit values in the workplace according to Directive No 2006/15/EC.

<table>
<thead>
<tr>
<th>CAS</th>
<th>Substance name</th>
<th>Limit values</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>8 hrs</td>
<td>Short term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>mg/m³</td>
<td>ppm</td>
</tr>
<tr>
<td>7664-93-9</td>
<td>Sulphuric acid (mist)</td>
<td>0.05</td>
<td>–</td>
</tr>
</tbody>
</table>

The note "skin" attached to the exposure limit values in the workplace indicates the possibility of a serious penetration through the skin.

Limit values for indicators of biological exposure tests are not defined according to Decree No 432/2003 Coll.

8.2 Exposure controls

Appropriate engineering controls

Not required.

Personal protective equipment

a. Eye/face protection

Safety goggles.

b. Hand protection

Not required.

c. Skin protection

Protective clothing.

d. Respiratory protection

Not required.

e. Thermal hazards

None known.

Environmental exposure controls

To eliminate the emergency conditions, have pre-prepared a decontamination mixture and appropriate collection vessels for reaction residues. Dispose of reaction residues and decontaminated mixtures as hazardous waste water in accordance with relevant legal regulations.
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Reagent 1

a. Appearance ................................................................................. Clear colourless liquid
b. Odour .......................................................................................... Information not available
c. Odour threshold ........................................................................... Information not available
d. pH (at 20 °C) ............................................................................... 1.0
e. Melting point/freezing point .......................................................... Information not available
f. Initial boiling point and boiling range (°C) ....................................... Information not available
g. Flash point (°C) ............................................................................. Information not available
h. Evaporation rate ............................................................................. Information not available
i. Flammability (solid, gas) ................................................................. Information not available
j. Upper/lower flammability or explosive limits ................................... Information not available
k. Vapour pressure (hPa) ................................................................. Information not available
l. Vapour density ............................................................................... Information not available
m. Relative density (kg m$^{-3}$) .............................................................. Information not available
n. Water solubility ............................................................................. Information not available
o. Partition coefficient: n-octanol/water ............................................. Information not available
p. Autoignition temperature (°C) ......................................................... Information not available
q. Decomposition temperature (°C) ................................................... Information not available
r. Viscosity ......................................................................................... Information not available
s. Explosive properties ..................................................................... Information not available
t. Oxidizing properties ..................................................................... Information not available

9.2 Other information

None.

SECTION 10: Stability and reactivity

Under normal conditions of use and storage the mixture is stable.

10.1 Reactivity

No data available.

10.2 Chemical stability

The mixture is stable at normal temperature and pressure.

10.3 Possibility of hazardous reactions

Not known.

10.4 Conditions to avoid

Avoid exposure to heat of solar radiation.

10.5 Incompatible materials

Metals, strong oxidizing agents and strong acids, ammonia.

10.6 Hazardous decomposition products

Hydrogen with metals.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

a) Acute toxicity
Based on available data, the classification criteria are not met.

b) Irritability
The mixture is classified as irritating to eyes.

c) Corrosion
Based on available data, the classification criteria are not met.

d) Sensitization
Based on available data, the classification criteria are not met.

e) Repeated dose toxicity
Based on available data, the classification criteria are not met.

f) Carcinogenicity
Based on available data, the classification criteria are not met.

g) Mutagenicity
Based on available data, the classification criteria are not met.

h) Reproductive toxicity
Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
The product does not have the properties of PBT and vPvB. Assessment based on the ingredients that do not have properties of PBT and vPvB.

12.6 Other adverse effects
There is no information about any special danger for environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of in compliance with applicable regulations for hazardous waste management. Do not drain into the wastewater. The mixture should be discarded as a laboratory waste. Incinerate residues of the mixture in a hazardous waste incinerator. Contaminated packaging must be treated as hazardous waste.
Safety Data Sheet


Date of issue: 2.10.2015
Date of review: 18.11.2015
Page 7 of 15 pages
Version: 1.1

Name of the mixture: PHOSPHORUS

Waste code 15 01 10 packaging containing residues of or contaminated by dangerous substances
16 05 06 laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

SECTION 14: Transport information

Not governed by regulations for transport of dangerous goods (ADR).

14.1 UN number
Not specified.

14.2 UN proper shipping name
ADR/RID: –
IMDG: –
ICAO/IATA: –

14.3 Transport hazard class(es)
ADR/RID: –
IMDG: –
ICAO/IATA: –

14.4 Packing group
ADR/RID: –
IMDG: –
ICAO/IATA: –

14.5 Environmental hazards
The mixture is not hazardous to the environment during transport.

14.6 Special precautions for user
No data available.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not transported.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety data sheet complies with the requirements of Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP).

15.2 Chemical safety assessment
Assessment was not carried out.

SECTION 16: Other information

List of H-statements
H-statements: H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
Recommended restrictions on use
This compound is designed for professional use. It should not be used for purposes other than those described in Section 1.2.

Information about data sources used to compile the Safety Data Sheet
Material Safety Data Sheets of raw material suppliers, ECHA (European Chemicals Agency), corporate documentation for products

Added or modified information (compared to the last version of the safety data sheet)
1.1 18. 11. 2015 Incorporating Commission Regulation (EU) 2015/830

Declaration
The safety data sheet contains basic data corresponding to the present state of our knowledge and experience, in accordance with applicable regulations. The foregoing information was gathered with the utmost care, but that does not mean that it is complete and should be used as the only correct information. Erba Lachema s.r.o. is not responsible for any damages caused by improper use and handling of the mixture.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

<table>
<thead>
<tr>
<th>Pack Name</th>
<th>PHOS 100</th>
<th>PHOS 250</th>
<th>PHOS 120</th>
<th>PHOS 220 XL-1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat. No.</td>
<td>BLT00047</td>
<td>BLT00048</td>
<td>XSYS0015</td>
<td>XSYS0093</td>
</tr>
<tr>
<td>Reagent 2 STD</td>
<td>1x5 ml</td>
<td>1x5 ml</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

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

Diagnostic reagent for quantitative *in vitro* determination of Phosphorus in human serum, plasma or urine.

1.3 Details of the supplier of the safety data sheet

Name of manufacturer: Erba Lachema s.r.o.
Place of business: Brno, Karásek 1d, postcode 621 00, CZ
ID no: 26918846
Phone: +420 517 077 111
E-mail: msds@erbalachema.com

1.4 Emergency telephone number

Erba Lachema s.r.o.
Phone: +420 517 077 556 (*service only during business hours*)
Toxicological Information Centre (TIS), Na Bojišti 1, 128 01 Prague 2
Phone: +420 224 919 293 or +420 224 915 402 (*service available 24 hours a day*)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Reagent 2 STD
Classification according to Regulation (EC) No 1272/2008
Mixture is not classified as hazardous.

2.2 Label elements

The product does not need to be labelled in accordance with EC directives.

2.3 Other hazards

Reagent 2 STD is not classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

The product is a mixture.

3.2 Mixtures

Reagent 2 STD contains no hazardous substances above limits that need to be mentioned in this section according to applicable EU-legislation.

SECTION 4: First aid measures

4.1 Description of first aid measures

No special measures required.
Name of the mixture: **PHOSPHORUS**

**Exposure by inhalation**
Discontinue the exposure.

**Exposure by contact with skin**
After contact with skin, wash with soap and water.

**Exposure by contact with eyes**
Rinse an open eye (hold eyelids with fingers) with plenty of water for about 15 minutes.

**Exposure by ingestion**
Rinse mouth with water, drink 1/2 l of lukewarm water.

4.2  **Most important symptoms and effects, both acute and delayed**
No data available.

4.3  **Indication of any immediate medical attention and special treatment needed**
No data available.

**SECTION 5:  Firefighting measures**
The mixture is not flammable. The measure should be adapted to burning substances in the surrounding area.

5.1  **Extinguishing media**
**Unsuitable extinguishing media:**
For mixture no unsuitable extinguishing media are known.

5.2  **Special hazards arising from the substance or mixture**
None.

5.3  **Advice for firefighters**
No special advice.

**SECTION 6:  Accidental release measures**

6.1  **Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment, see Section 8. Observe the principles of work safety in chemical laboratories. Do not eat, drink or smoke.

6.2  **Environmental precautions**
Due to amount of chemical substances in a mixture, an impact on the environment is not expected.

6.3  **Methods and material for containment and cleaning up**
Absorb spilled agent with a suitable inert material (sand, earth, vapex) and store contaminated material in containers for collection of hazardous waste. For waste disposal, see Section 13.

6.4  **Reference to other sections**
See section 7, 8 and 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Observe the principles of work in laboratory. Observe the normal operating procedures for handling chemical substances and mixtures. Do not eat, drink or smoke. Use personal protective equipment, see Section 8.

7.2 Conditions for safe storage, including any incompatibilities
Store in dry and covered stores in tightly closed containers at a temperature between +2 °C and +8 °C.

7.3 Specific end use(s)
The kit is designed for in vitro diagnostic devices.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Control parameters of the mixture components are not defined according to Government Decree No 361/2007 Coll.

Exposure limit values in the workplace are not defined according to Directive No 2006/15/EC.

Limit values for indicators of biological exposure tests are not defined according to Decree No 432/2003 Coll.

8.2 Exposure controls

Appropriate engineering controls
Not required.

Personal protective equipment
a. Eye/face protection
Not required.
b. Hand protection
Not required.
c. Skin protection
Not required.
d. Respiratory protection
Not required.
e. Thermal hazards
None known.

Environmental exposure controls
To eliminate the emergency conditions, have pre-prepared a decontamination mixture and appropriate collection vessels for reaction residues. Dispose of reaction residues and decontaminated mixtures as hazardous waste water in accordance with relevant legal regulations.
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Reagent 2 STD

a. Appearance ........................................ Clear colourless liquid
b. Odour ............................................. Information not available
c. Odour threshold ................................... Information not available
d. pH (at 20 °C) ..................................... Information not available
e. Melting point/freezing point ..................... Information not available
f. Initial boiling point and boiling range (°C) ................................... Information not available
g. Flash point (°C) .................................... Information not available
h. Evaporation rate .................................. Information not available
i. Flammability (solid, gas) ......................... Information not available
j. Upper/lower flammability or explosive limits ...... Information not available
k. Vapour pressure (hPa) .......................... Information not available
l. Vapour density .................................... Information not available
m. Relative density (kg m$^{-3}$) ................. Information not available
n. Water solubility .................................. Information not available
o. Partition coefficient: n-octanol/water ........ Information not available
p. Autoignition temperature (°C) .................. Information not available
q. Decomposition temperature (°C)............. Information not available
r. Viscosity .......................................... Information not available
s. Explosive properties .............................. Information not available
t. Oxidizing properties .............................. Information not available

9.2 Other information

None.

SECTION 10: Stability and reactivity

Under normal conditions of use and storage the mixture is stable.

10.1 Reactivity

No data available.

10.2 Chemical stability

The mixture is stable at normal temperature and pressure.

10.3 Possibility of hazardous reactions

Not known.

10.4 Conditions to avoid

No data available.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition products

No dangerous decomposition products known.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

a) Acute toxicity
Based on available data, the classification criteria are not met.

b) Irritability
Based on available data, the classification criteria are not met.

c) Corrosion
Based on available data, the classification criteria are not met.

d) Sensitization
Based on available data, the classification criteria are not met.

e) Repeated dose toxicity
Based on available data, the classification criteria are not met.

f) Carcinogenicity
Based on available data, the classification criteria are not met.

g) Mutagenicity
Based on available data, the classification criteria are not met.

h) Reproductive toxicity
Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
The product does not have the properties of PBT and vPvB. Assessment based on the ingredients that do not have properties of PBT and vPvB.

12.6 Other adverse effects
There is no information about any special danger for environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of in compliance with applicable regulations for hazardous waste management. Do not drain into the wastewater. The mixture should be discarded as a laboratory waste. Incinerate residues of the mixture in a hazardous waste incinerator. Contaminated packaging must be treated as hazardous waste.
SECTION 14: Transport information

Not governed by regulations for transport of dangerous goods (ADR).

14.1 UN number

Not specified.

14.2 UN proper shipping name

ADR/RID: –
IMDG: –
ICAO/IATA: –

14.3 Transport hazard class(es)

ADR/RID: –
IMDG: –
ICAO/IATA: –

14.4 Packing group

ADR/RID: –
IMDG: –
ICAO/IATA: –

14.5 Environmental hazards

The mixture is not hazardous to the environment during transport.

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not transported.

SECTION 15: Regulatory information

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

This safety data sheet complies with the requirements of Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP).

15.2 Chemical safety assessment

Assessment was not carried out.

SECTION 16: Other information

Recommended restrictions on use

This compound is designed for professional use. It should not be used for purposes other than those described in Section 1.2.

Information about data sources used to compile the Safety Data Sheet

Material Safety Data Sheets of raw material suppliers, ECHA (European Chemicals Agency), corporate documentation for products

Added or modified information (compared to the last version of the safety data sheet)

1.1 18.11.2015 Incorporating Commission Regulation (EU) 2015/830
Declaration
The safety data sheet contains basic data corresponding to the present state of our knowledge and experience, in accordance with applicable regulations. The foregoing information was gathered with the utmost care, but that does not mean that it is complete and should be used as the only correct information. Erba Lachema s.r.o. is not responsible for any damages caused by improper use and handling of the mixture.