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

1.1 Product identifier

<table>
<thead>
<tr>
<th>LEUCODIF 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog Number</td>
</tr>
<tr>
<td>Reagent 1</td>
</tr>
<tr>
<td>Reagent 2</td>
</tr>
<tr>
<td>Reagent 3</td>
</tr>
<tr>
<td>Reagent 4</td>
</tr>
</tbody>
</table>

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

Set for fast staining of blood smears. The mixture is intended for professional use.

1.3 Details of the supplier of the safety data sheet

Name of manufacturer: Erba Lachema s.r.o.
Place of business: Karasek 2219/1d, 621 00 Brno, CZ
ID no.: 26918846
Phone: +420 517 077 111
Fax: +420 517 077 077
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 Bojisti 1, 128 01 Prague, CZ
Phone: +420 224 919 293 or +420 224 915 402 (service available 24 hours a day)

SECTION 2: Hazards identification

The kit LEUCODIF 200 is classified as dangerous according to EU Directives 1999/45/EC as amended.

2.1 Classification of the substance or mixture

Reagent 1
The mixture of reagent 1 is classified as toxic and highly flammable.
R11 Highly flammable
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Reagent 2
The mixture of reagent 2 is not classified as dangerous according to EU Directives 1999/45/EC as amended

Reagent 3
The mixture of reagent 3 is not classified as dangerous according to EU Directives 1999/45/EC as amended
Reagent 4
The mixture of reagent 1 is classified as irritant.
R36/37/38 Irritating to eyes, respiratory system and skin.

2.2 Label elements
Labelling according to EU Directive 1999/45/EC

Reagent 1

- Toxic
- Highly flammable

Risk phrases (R):
R11 Highly flammable
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Safety phrases (S):
S7 Keep container tightly closed.
S16 Keep away from sources of ignition – No smoking.
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Reagent 4

- Irritant

Risk phrases (R):
R36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases (S):
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36 Wear suitable protective clothing.

2.3 Other hazards
None
SECTION 3: Composition/information on ingredients

3.2 Mixtures
The reagent 1 contains the 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>Classification according to (EC) No. 67/548 EEC</th>
<th>Classification according to (EC) No. 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol*</td>
<td>100</td>
<td>67-56-1</td>
<td>200-659-6</td>
<td>603-001-00-X</td>
<td>F; R11</td>
<td>T; R23/24/25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Flam. Liq. 2, H225</td>
<td>Acute Tox. 3, H301</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3, H311</td>
<td>Acute Tox. 3, H331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STOT SE 1, H370</td>
<td></td>
</tr>
</tbody>
</table>

The reagent 4 contains the 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>Classification according to (EC) No. 67/548 EEC</th>
<th>Classification according to (EC) No. 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic dihydrate</td>
<td>67</td>
<td>10028-24-7</td>
<td>231-448-7</td>
<td>-</td>
<td>Xi; R36/37/38</td>
<td></td>
</tr>
</tbody>
</table>

*) Substance with exposure limits (exposure limits are listed in Chapter 8.1)
For a full text of R-phrases, S-phrases, H-phrases and P-phrases 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*
Take off all contaminated clothing. 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, do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed
None

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

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Name of the mixture: LEUCODIF 200

Water spray, foam, dry powder, carbon dioxide

5.2 Special hazards arising from the substance or mixture
Flammable substance. During thermal decomposition toxic products are generated. Direct stream of water can cause the burning liquid to spill. Vapors may extend to a considerable distance to source of ignition and flame may burst backward. Fumes in combination with air can form an explosive mixture. Heat can cause an explosion of package.

5.3 Advice for firefighters
Self-contained breathing apparatus, chemical-protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For ordinary workers, except emergency staff
Use personal protective equipment, see section 8. Observe the principles of work safety in chemical laboratories. Do not eat, drink or smoke.

6.1.2 For the staff of emergency responders
Isolate and mark the spill site, order all the people out of the place, who do not participate in the rescue work. Remove all possible sources of ignition, turn off vehicle engines, no smoking and open flames, use non-sparking tools and lamps. Use all recommended personal protective equipment during rescue work.

6.2 Environmental precautions
Reagent 1: Avoid contamination of surface water, groundwater and soil. Do not discharge into the drains, danger of explosion.

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. Sweep solid reagent and store 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
Ensure sufficient ventilation of the space, use personal protective equipment, no smoking and open flames, avoid release to the environment.

7.2 Conditions for safe storage, including any incompatibilities
Store in dry and covered stores at a temperature between +2 °C and +25 °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
Exposure limit values of the mixture components according to Government Decree No. 361/2007 Coll.
Safety Data Sheet

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Date of review: 22.09.2014
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Version: 1

Name of the mixture: LEUCODIF 200

<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>67-56-1</td>
<td>Methanol</td>
<td>250</td>
<td>1000</td>
<td>D</td>
<td>0.754</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; * - 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>67-56-1</td>
<td>Methanol</td>
<td>260 mg/m³, 200 ppm</td>
<td>Skin</td>
</tr>
</tbody>
</table>

Limit values for indicators of biological exposure tests in urine for the product according to Decree No. 432/2003 Coll.

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Indicator</th>
<th>Limit values</th>
<th>Sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Methanol</td>
<td>15 mg/l, 0.47 mmol/l</td>
<td>End of shift</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
None

Personal protective equipment
a) Respiratory protection: Not required with adequate ventilation
b) Hand protection: Protective gloves - resistant to caustic substances
c) Eye protection: Safety goggles
d) Skin protection: Protective clothing

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
Appearance: ......................................................... pale green liquid
Odour: ................................................................. no data available
Odour Threshold: .................................................. no data available
pH (at 20 °C): ....................................................... no data available
Melting point/freezing point: .................................. no data available
Initial boiling point and boiling range (°C): .......................... 64.6
Flash point (°C): ..................................................... 11
Evaporation rate: .................................................. no data available
Flammability (solid, gas): ........................................ no data available
Upper/lower flammability or explosive limits: ......................... no data available
Vapour pressure (hPa): ........................................... 128
Vapour density: .................................................... no data available
Relative density (kg·m⁻³): ........................................ 0.79
Water solubility: ................................................... no data available
**Safety Data Sheet**


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**Name of the mixture:** LEUCODIF 200

Partition coefficient: n-octanol/water: no data available
Autoignition temperature (°C): no data available
Decomposition temperature (°C): no data available
Viscosity: no data available
Explosive properties: no data available
Oxidizing properties: no data available

**Reagent 2**

Appearance: red liquid
Odour: no data available
Odour Threshold: no data available
pH (at 20 °C): no data available
Melting point/freezing point: no data available
Initial boiling point and boiling range (°C): no data available
Flash point (°C): no data available
Evaporation rate: no data available
Flammability (solid, gas): no data available
Upper/lower flammability or explosive limits: no data available
Vapour pressure (hPa): no data available
Vapour density: no data available
Relative density (kg·m⁻³): no data available
Water solubility: no data available
Partition coefficient: n-octanol/water: no data available
Autoignition temperature (°C): no data available
Decomposition temperature (°C): no data available
Viscosity: no data available
Explosive properties: no data available
Oxidizing properties: no data available

**Reagent 3**

Appearance: dark blue liquid
Odour: no data available
Odour Threshold: no data available
pH (at 20 °C): no data available
Melting point/freezing point: no data available
Initial boiling point and boiling range (°C): no data available
Flash point (°C): no data available
Evaporation rate: no data available
Flammability (solid, gas): no data available
Upper/lower flammability or explosive limits: no data available
Vapour pressure (hPa): no data available
Vapour density: no data available
Relative density (kg·m⁻³): no data available
Water solubility: no data available
Partition coefficient: n-octanol/water: no data available
Autoignition temperature (°C): no data available
Decomposition temperature (°C): no data available
Viscosity: no data available
Explosive properties: no data available
Oxidizing properties: no data available

Reagent 4
Appearance: white solid
Odour: no data available
Odour Threshold: no data available
pH (at 20 °C): 8
Melting point/freezing point: no data available
Initial boiling point and boiling range (°C): no data available
Flash point (°C): no data available
Evaporation rate: no data available
Flammability (solid, gas): no data available
Upper/lower flammability or explosive limits: no data available
Vapour pressure (hPa): no data available
Vapour density: no data available
Relative density (kg·m⁻³): no data available
Water solubility: no data available
Partition coefficient: n-octanol/water: no data available
Autoignition temperature (°C): no data available
Decomposition temperature (°C): no data available
Viscosity: no data available
Explosive properties: no data available
Oxidizing properties: no data 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
No data available

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Reagent 1: Do not store near heat sources, sources of sparking and open flame.

10.5 Incompatible material
Reagent 1: Inorganic bases, strong oxidizing agents, strong reducing agents, alkali metal, barium hydroxide, bromine, bromoform, boron trifluoride.

10.6 Hazardous decomposition products
In case of fire carbon oxides are generated.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Reagent 1**: Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Toxic by inhalation, in contact with skin and if swallowed.

- Rat oral LD$_{50}$ (mg·kg$^{-1}$) .................................. 5 628
- Rabbit dermal LD$_{50}$ (mg·kg$^{-1}$) .......................... 15 800
- Rat inhalation LD$_{50}$ (mg·6$^{-1}$) .......................... 64 000/4hrs
- Rat inhalation TLS (g·kg$^{-1}$) ...................... not applicable

SECTION 12: Ecological information

12.1 Toxicity

**Reagent 1**: Acute toxicity

- LC$_{50}$ 96 hrs, fish (mg·l$^{-1}$) ...................... 15 400
- EC$_{50}$ 48 hrs, daphnia (mg·l$^{-1}$) .................. >10 000
- IC$_{50}$ 72 hrs algae (mg·l$^{-1}$) ...................... 8 000
- CHSK .............................................. .............. not applicable
- BSK$_{5}$ .............................................. .............. not applicable

12.2 Persistence and degradability

Not applicable.

12.3 Bioaccumulative potential

Not applicable.

12.4 Mobility in soil

Not applicable.

12.5 Results of PBT and vPvB assessment

The mixture does not have properties of PBT and vPvB. This statement was considered from substances that do not have properties of PBT and vPvB.

12.6 Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Dispose of in compliance with applicable regulations for hazardous waste management. Incinerate residues of the mixture in a hazardous waste incinerator. Contaminated packaging must be treated as hazardous waste. Dispose of by incinerating in a hazardous waste incinerator.

SECTION 14: Transport information

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

14.1 UN number

- ADR/RID: -
- IMDG: -
- ICAO/IATA: -

14.2 UN proper shipping name

ADR/RID: -
Name of the mixture: **LEUCODIF 200**

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

14.4 Packaging group
ADR/RID: -
IMDG: -
ICAO/IATA: -

14.5 Environmental hazards
ADR/RID: no
IMDG: no
ICAO/IATA: no

14.6 Special precautions for user
No data available.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not transported.

**SECTION 15: Regulatory information**
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Regulation (EC) No. 1907/2006 (REACH)
Regulation (EC) No. 1272/2008 (CLP)
EU Directive 1999/45/EC
EU Directive 67/548/EEC

15.2 Chemical safety assessment
No data available.

**SECTION 16: Other information**

**List of R-phrases**
R11 Highly flammable
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

**List of H-phrases:**
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.
H370 Causes damage to organs.
List of S-phrases:
S7 Keep container tightly closed.
S16 Keep away from sources of ignition – No smoking.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36 Wear suitable protective clothing.
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

List of P-phrases:
P280 Wear protective gloves/protective clothing.
P233 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P210 Keep container tightly closed.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P307+P311 IF EXPOSED: Call a POISON CENTER or doctor/physician.

Training instructions
Workers who come into contact with hazardous materials shall be acquainted by the organization, to a necessary extent, with the effects of these substances, with the methods how to treat them, with protective measures, the principles of first aid, necessary sanitation procedures and procedures for liquidation of failures and accidents. Under Article 35 of the European Parliament and Council Regulation (EC) No. 1907/2006, the employer must enable employees or their representatives access to information from the safety data sheet of the substance or mixture the worker uses or the effects of which can be exposed to during his/her work.

Recommended restrictions on use
The mixture is intended for professional use. It should not be used for purposes other than those listed under 1.2.

Further information
Information given is based on our best knowledge and is intended to describe the product for the purposes of safety of transporting and handling only. It should not be therefore construed as guaranteeing any specific property of the product. It is the responsibility of the user to observe all current regulations and consider recommendations on the use of application of product.

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.