

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review: 12.05.2015

Page 1 of 33 pages

Version: 1.1

Name of the mixture: Reagent for ACETOIN test

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

### 1.1 Product identifier

Reagent for ACETOIN test	
Pack Name	Reagent for VPT
Cat. No.	10003369
Reagent for VPT I weight	1×1.8 g

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

The kit is supplementary colour forming reagent for the test for the formation of acetoin (the Voges-Proskauer reaction).

### 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](mailto: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 for VPT I weight

#### Classification according to Regulation (EC) No 1272/2008

Acute Tox. 4 H302

Acute Tox. 4 H312

Skin Irrit. 2 H315

Eye Dam. 1 H318

STOT SE 3 H335

#### Classification according to 67/548/EEC or 1999/45/EC

Xn R21/22

Xi R37/38-41

For a full text of R-phrases and H-statements see Section 16.

### 2.2 Label elements

Reagent for VPT I weight



Pictogram:

Signal word: Danger

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review: 12.05.2015

Page 2 of 33 pages

Version: 1.1

Name of the mixture: Reagent for ACETOIN test

Hazard-determining components of labelling:

1-naphtol

Hazard statement(s):

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

Precautionary statement(s):

P261 Avoid breathing vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

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.

### 2.3 Other hazards

Reagent for VPT I weight is not classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Reagent for VPT I weight contains following hazardous substances:

Substance name	Content (% of weight)	CAS number EC number Index number	Classification according to		
			67/548/EEC	1272/2008	
1-naphtol	100	90-15-3 201-969-4 604-029-00-5	Xn; R21/22 Xi; R37/38-41	Acute Tox. 4 Acute Tox. 4 Skin Irrit. 2 Eye Dam. 1 STOT SE 3	H302 H312 H315 H318 H335

For a full text of R-phrases and H-statements see Section 16.

### 3.2 Mixtures

The product is a substance.

## 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.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review: 12.05.2015

Page 3 of 33 pages

Version: 1.1

Name of the mixture: Reagent for ACETOIN test

**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**

Difficulty in breathing, coughing, asthmatic problems, headaches, nausea, unconsciousness.

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

In case of lung irritation administer dexamethasone.

**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**

In case of fire, use water spray (fog), carbon dioxide or dry chemical powder.

**5.2 Special hazards arising from the substance or mixture**

None known.

**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. 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**

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 at a temperature between +2 °C and +25 °C.

**7.3 Specific end use(s)**

The kit is designed for *in vitro* diagnostic devices.

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review: 12.05.2015

Page 4 of 33 pages

Version: 1.1

Name of the mixture: Reagent for ACETOIN test

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

**Control parameters** 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

Sufficient ventilation.

##### Personal protective equipment

a. Eye/face protection

Safety goggles.

b. Hand protection

Protective gloves - rubber, resistant to caustic substances.

c. Skin protection

Protective clothing.

d. Respiratory protection

Not required with adequate ventilation, otherwise breathing apparatus.

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 for VPT I weight

a. Appearance .....	Slightly pink solid substance
b. Odour .....	Phenol-like
c. Odour threshold .....	Information not available
d. pH (at 20 °C) .....	Information not available
e. Melting point/freezing point.....	97
f. Initial boiling point and boiling range (°C) .....	280
g. Flash point (°C) .....	153
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) .....	1.33
l. Vapour density.....	Information not available
m. Relative density (kg m <sup>-3</sup> ).....	1 095
n. Water solubility .....	Insoluble
o. Partition coefficient: n-octanol/water .....	2.98

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review: 12.05.2015

Page 5 of 33 pages

Version: 1.1

Name of the mixture: Reagent for ACETOIN test

- p. Autoignition temperature (°C)..... Information not available  
q. Decomposition temperature (°C)..... Information not available  
r. Viscosity ..... Information not available  
s. Explosive properties ..... Not classified as explosive  
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**

Reaction with strong oxidizing agents, strong alkalis and acid chlorides.

**10.4 Conditions to avoid**

No data available.

**10.5 Incompatible materials**

Strong bases, anhydrides and acid chlorides.

**10.6 Hazardous decomposition products**

Carbon monoxide and carbon dioxide, toxic gases and vapours.

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****a) Acute toxicity**

The mixture is harmful when ingested or in contact with skin.

Rat oral LD <sub>50</sub> (mg·kg <sup>-1</sup> ).....	1 870
Rabbit dermal LD <sub>50</sub> (mg·kg <sup>-1</sup> ).....	880
Rat inhalation LD <sub>50</sub> (mg·m <sup>-1</sup> ).....	not applicable
Rat inhalation TLS (g·kg <sup>-1</sup> ).....	not applicable

**b) Irritability**

Reagent for VPT I weight causes irritation to skin.

**c) Corrosion**

Reagent for VPT I weight causes serious eye damage. Risk of blindness.

**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.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review: 12.05.2015

Page 6 of 33 pages

Version: 1.1

Name of the mixture: Reagent for ACETOIN test

**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**

The mixture is not classified as toxic to environmental.

**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.

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****14.1 UN number**

UN 2811

**14.2 UN proper shipping name**

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. (1-NAPHTHOL)

IMDG: TOXIC SOLID, ORGANIC, N.O.S. (1-NAPHTHOL)

ICAO/IATA: TOXIC SOLID, ORGANIC, N.O.S. (1-NAPHTHOL)

**14.3 Transport hazard class(es)**

ADR/RID: 6.1

IMDG: 6.1

ICAO/IATA: 6.1

**14.4 Packing group**

ADR/RID: III

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review: 12.05.2015

Page 7 of 33 pages

Version: 1.1

Name of the mixture: Reagent for ACETOIN test

IMDG: III

ICAO/IATA: III

**14.5 Environmental hazards**

The mixture is not hazardous to the environment during transport.

**14.6 Special precautions for user**

ADR/RID: Tunnel restriction code C/E

IMDG: EmS F-A S-A

ICAO/IATA: No

**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, P-statements and R-phrases**

H-statements: H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.

P-statements: P261 Avoid breathing vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
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.

R-phrases: R21/22 Harmful in contact with skin and if swallowed.  
R37/38 Irritating to respiratory system and skin.  
R41 Risk of serious damage to eyes.

**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.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review: 12.05.2015

Page 8 of 33 pages

Version: 1.1

Name of the mixture: Reagent for ACETOIN test

**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

*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.*



## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 9 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

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

### 1.1 Product identifier

Reagent for ACETOIN test	
Pack Name	Reagent for VPT
Cat. No.	10003369
Reagent for VPT I solvent	1×18 ml

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

The kit is supplementary colour forming reagent for the test for the formation of acetoin (the Voges-Proskauer reaction).

### 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](mailto: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 for VPT I solvent

#### Classification according to Regulation (EC) No 1272/2008

Flam. Liq. 2 H225

Acute Tox. 4 H302

STOT SE 2 H371

#### Classification according to 67/548/EEC or 1999/45/EC

F R11

Xn R20/21/22

Xn R68/20/21/22

For a full text of R-phrases and H-statements see Section 16.

### 2.2 Label elements

Reagent for VPT I solvent



Pictogram:

Signal word: Danger

Hazard-determining components of labelling:

Methanol

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 10 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

### Hazard statement(s):

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H371 May cause damage to organs.

### Precautionary statement(s):

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P261 Avoid breathing vapours.

P280 Wear protective gloves/protective clothing/eye protection.

P308+P313 IF exposed or concerned: Get medical advice.

### 2.3 Other hazards

Mixture or components are not classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

The product is a mixture.

### 3.2 Mixtures

Reagent for VPT I solvent contains following hazardous substances:

Substance name	Content (% of weight)	CAS number EC number Index number	Classification according to		
			67/548/EEC	1272/2008	
Ethanol*	95	64-17-5 200-578-6 603-002-00-5	F; R11	Flam. Liq. 2	H225
Methanol*	5	67-56-1 200-659-6 603-001-00-X	F; R11 T; 23/24/25 T; 39/23/24/25	Flam. Liq. 2 Acute Tox. 3 Acute Tox. 3 Acute Tox. 3 STOT SE 1	H225 H301 H311 H331 H370

\*) Substance with exposure limits (exposure limits are listed in Section 8.1)

For a full text of R-phrases and 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

Take off all contaminated clothing. After contact with skin, wash immediately with soap and water.

#### Exposure by contact with eyes

Rinse an open eye with plenty of water for about 15 minutes, transfer casualty to a specialist.

#### Exposure by ingestion

Drink 1/2 l of lukewarm water, and DO induce vomiting. Seek medical attention immediately.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 11 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

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

Irritant effects, respiratory paralysis, dermatitis, dizziness, narcosis, inebriation, euphoria, nausea, vomiting, risk of eye damage.

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

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

**SECTION 5: Firefighting measures**

The mixture is flammable.

**5.1 Extinguishing media**

Suitable extinguishing media:

Spray, water mist, universal powder, inert gases, CO<sub>2</sub>, foam.

Unsuitable extinguishing media:

Direct water stream.

**5.2 Special hazards arising from the substance or mixture**

When burning, reagent may generate an explosive mixture of gas and air or toxic gases.

**5.3 Advice for firefighters**

Use self-contained breathing apparatus. Wear protective clothing.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

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, do not smoke and avoid open flames, use non-sparking tools and lamps. Use all recommended personal protective equipment during rescue work.

**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. 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**

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 at a temperature between +2 °C and +25 °C.

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 12 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

### 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.

CAS	Substance name	PEL	NPK-P	Note	Conversion factor for ppm
		mg/m <sup>3</sup>	mg/m <sup>3</sup>		
64-17-5	Ethanol	1000	3000	–	0.532
67-56-1	Methanol	250	1000	D	0.754

*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.

CAS	Substance name	Limit values				Note
		8 hrs		Short term		
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
67-56-1	Methanol	260	200	–	–	Skin

*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 according to Decree No 432/2003 Coll.

Substance name	Indicator	Limit values		Sampling time
Methanol	Methanol	15 mg/l	0.47 mmol/l	End of a shift

### 8.2 Exposure controls

#### Appropriate engineering controls

Sufficient ventilation.

#### Personal protective equipment

a. Eye/face protection

Safety goggles.

b. Hand protection

Protective gloves - rubber, resistant to caustic substances.

c. Skin protection

Protective clothing.

d. Respiratory protection

Not required with adequate ventilation, otherwise breathing apparatus.

e. Thermal hazards

Observe the regulations for handlings flammable liquids.

#### 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.

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 13 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Reagent for VPT I solvent

a. Appearance .....	Clear colourless liquid
b. Odour .....	Alcohol
c. Odour threshold .....	Information not available
d. pH (at 20 °C) .....	7.0
e. Melting point/freezing point .....	-114
f. Initial boiling point and boiling range (°C) .....	78
g. Flash point (°C) .....	12.9
h. Evaporation rate .....	6.3 (ether = 1)
i. Flammability (solid, gas) .....	Highly flammable substance
j. Upper/lower flammability or explosive limits .....	19/3.3
k. Vapour pressure (hPa) .....	57
l. Vapour density .....	1.6 (relative to air)
m. Relative density (kg m <sup>-3</sup> ) .....	784.4
n. Water solubility .....	789 g/l at 20 °C
o. Partition coefficient: n-octanol/water .....	log Kow (Pow) -0.35
p. Autoignition temperature (°C) .....	363
q. Decomposition temperature (°C) .....	Information not available
r. Viscosity .....	1.2 mPa s
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

Vapours may form explosive mixtures with air.

### 10.2 Chemical stability

The mixture is stable at normal temperature and pressure.

### 10.3 Possibility of hazardous reactions

Danger of ignition or formation of inflammable gases with chromium trioxide, hydrogen peroxide, nitrogen dioxide, nitric acid, phosphorus oxides, permanganic acid, perchloric acid, sulphuric acid, potassium permanganate, perchlorates, fluorine, strong oxidizing agents, alkali oxides and alkaline metals.

### 10.4 Conditions to avoid

Heating to 15 °C below the flash point.

### 10.5 Incompatible materials

Rubber, various plastics.

### 10.6 Hazardous decomposition products

No dangerous decomposition products known.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 14 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****a) Acute toxicity**

The mixture is harmful when ingested.

Rat oral LD <sub>50</sub> (mg·kg <sup>-1</sup> ).....	10 470
Rabbit dermal LD <sub>50</sub> (mg·kg <sup>-1</sup> ).....	15 800
Rat inhalation LD <sub>50</sub> (mg·m <sup>-1</sup> ).....	30 000
Rat inhalation TLS (g·kg <sup>-1</sup> ).....	not applicable

**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**

The mixture is not classified as toxic to environmental.

**12.2 Persistence and degradability**

Biodegradable.

**12.3 Bioaccumulative potential**

The product does not have bioaccumulative potential.

**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.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 15 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**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.

Waste code 07 07 04 Other organic solvents, washing liquids and mother liquors.

**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, P-statements and R-phrases**

H-statements: H225 Highly flammable liquid and vapour.  
H301 Toxic if swallowed.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 16 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

H302 Harmful if swallowed.  
H311 Toxic with contact with skin.  
H331 Toxic if inhaled.  
H370 Causes damage to organs.  
H371 May cause damage to organs.

P-statements: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 Avoid breathing vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection.  
P308+P313 IF exposed or concerned: Get medical advice.

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.

**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

*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.*



## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 17 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

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

### 1.1 Product identifier

Reagent for ACETOIN test	
Pack Name	Reagent for VPT
Cat. No.	10003369
Reagent for VPT I	1×dropping bottle

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

The kit is supplementary colour forming reagent for the test for the formation of acetoin (the Voges-Proskauer reaction).

### 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](mailto: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 for VPT I

#### Classification according to Regulation (EC) No 1272/2008

Flam. Liq. 2 H225  
 Acute Tox. 4 H302  
 Eye Dam. 1 H318  
 STOT SE 2 H371

#### Classification according to 67/548/EEC or 1999/45/EC

F R11  
 Xn R20/21/22  
 Xn R68/20/21/22  
 Xi R41

For a full text of R-phrases and H-statements see Section 16.

### 2.2 Label elements

Reagent for VPT I



Pictogram:

Signal word: Danger

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 18 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

Hazard-determining components of labelling:

Methanol, 1-naphtol

Hazard statement(s):

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H371 May cause damage to organs.

Precautionary statement(s):

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P261 Avoid breathing vapours.

P280 Wear protective gloves/protective clothing/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.

P308+P313 IF exposed or concerned: Get medical advice.

### 2.3 Other hazards

Reagents are not classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

The product is a mixture.

### 3.2 Mixtures

Reagent for VPT I contains following hazardous substances:

Substance name	Content (% of weight)	CAS number EC number Index number	Classification according to		
			67/548/EEC	1272/2008	
1-naphtol	9	90-15-3 201-969-4 604-029-00-5	Xn; R21/22 Xi; R37/38-41	Acute Tox. 4 Acute Tox. 4 Skin Irrit. 2 Eye Dam. 1 STOT SE 3	H302 H312 H315 H318 H335
Ethanol*	86.5	64-17-5 200-578-6 603-002-00-5	F; R11	Flam. Liq. 2	H225
Methanol*	4.5	67-56-1 200-659-6 603-001-00-X	F; R11 T; 23/24/25 T; 39/23/24/25	Flam. Liq. 2 Acute Tox. 3 Acute Tox. 3 Acute Tox. 3 STOT SE 1	H225 H301 H311 H331 H370

\*) Substance with exposure limits (exposure limits are listed in Section 8.1)

For a full text of R-phrases and 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.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 19 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**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**

Drink 1/2 l of lukewarm water, DO induce vomiting. Seek medical attention immediately.

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

Irritant effects, respiratory paralysis, dermatitis, dizziness, narcosis, inebriation, euphoria, nausea, vomiting, risk of eye damage, difficulty in breathing, coughing, asthmatic problems, headaches, unconsciousness.

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

Symptoms of poisoning may even occur after several hours, therefore medical observation for at least 48 hours after the accident is recommended. In case of lung irritation administer dexamethasone.

---

**SECTION 5: Firefighting measures**

The mixture is flammable.

**5.1 Extinguishing media**

Suitable extinguishing media:

Spray, water mist, universal powder, inert gases, CO<sub>2</sub>, foam.

Unsuitable extinguishing media:

Direct water stream.

**5.2 Special hazards arising from the substance or mixture**

When burning, reagent may generate an explosive mixture of gas and air or toxic gases.

**5.3 Advice for firefighters**

Use self-contained breathing apparatus. Wear protective clothing.

---

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

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, do not smoke and avoid open flames, use non-sparking tools and lamps. Use all recommended personal protective equipment during rescue work.

**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. Sweep solid reagent and store in containers for collection of hazardous waste. For waste disposal, see Section 13.

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 20 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

### 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

Prepared Reagent for VPT I store in the dark at a temperature between +2 °C and +8 °C, not longer than 4 months.

### 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.

CAS	Substance name	PEL	NPK-P	Note	Conversion factor for ppm
		mg/m <sup>3</sup>	mg/m <sup>3</sup>		
64-17-5	Ethanol	1000	3000	–	0.532
67-56-1	Methanol	250	1000	D	0.754

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.

CAS	Substance name	Limit values				Note
		8 hrs		Short term		
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
67-56-1	Methanol	260	200	–	–	Skin

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 according to Decree No 432/2003 Coll.

Substance name	Indicator	Limit values		Sampling time
Methanol	Methanol	15 mg/l	0.47 mmol/l	End of a shift

### 8.2 Exposure controls

#### Appropriate engineering controls

Sufficient ventilation.

#### Personal protective equipment

a. Eye/face protection

Safety goggles.

b. Hand protection

Protective gloves - rubber, resistant to caustic substances.

c. Skin protection

Protective clothing.

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 21 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

### d. Respiratory protection

Not required with adequate ventilation, otherwise breathing apparatus.

### e. Thermal hazards

Observe the regulations for handlings flammable liquids.

## 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 for VPT I

a. Appearance .....	Clear colourless liquid
b. Odour .....	Alcohol
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) .....	Flammable
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 <sup>-3</sup> ) .....	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

Vapours may form explosive mixtures with air.

### 10.2 Chemical stability

The mixture is stable at normal temperature and pressure.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 22 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**10.3 Possibility of hazardous reactions**

Danger of ignition or formation of inflammable gases with chromium trioxide, hydrogen peroxide, nitrogen dioxide, nitric acid, phosphorus oxides, permanganic acid, perchloric acid, sulphuric acid, potassium permanganate, perchlorates, fluorine, strong oxidizing agents, alkali oxides and alkaline metals.

**10.4 Conditions to avoid**

Heating to 15 °C below the flash point.

**10.5 Incompatible materials**

Rubber, various plastics, strong oxidizing agents, strong bases, anhydrides and acid chlorides.

**10.6 Hazardous decomposition products**

Carbon monoxide and carbon dioxide, toxic gases and vapours.

---

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****a) Acute toxicity**

Reagent for VPT I is harmful when ingested.

**b) Irritability**

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

**c) Corrosion**

Reagent for VPT I causes serious eye damage.

**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**

The mixture is not classified as toxic to environmental.

**12.2 Persistence and degradability**

No data available.

**12.3 Bioaccumulative potential**

No data available.

**12.4 Mobility in soil**

No data available.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 23 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**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.

Waste code	07 07 04	Other organic solvents, washing liquids and mother liquors.
	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.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 24 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**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, P-statements and R-phrases**

H-statements: H225 Highly flammable liquid and vapour.  
H301 Toxic if swallowed.  
H302 Harmful if swallowed.  
H311 Toxic with contact with skin.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H331 Toxic if inhaled.  
H335 May cause respiratory irritation.  
H370 Causes damage to organs.  
H371 May cause damage to organs.

P-statements: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 Avoid breathing vapours/spray.  
P280 Wear protective gloves/protective clothing/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.  
P308+P313 IF exposed or concerned: Get medical advice.

R-phrases: R11 Highly flammable.  
R21/22 Harmful in contact with skin and if swallowed.  
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.  
R37/38 Irritating to respiratory system and skin.  
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.  
R41 Risk of serious damage to eyes.

**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.



**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 25 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**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.*

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 26 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

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

### 1.1 Product identifier

Reagent for ACETOIN test	
Pack Name	Reagent for VPT
Cat. No.	10003369
Reagent for VPT II	1×18 ml

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

The kit is supplementary colour forming reagent for the test for the formation of acetoin (the Voges-Proskauer reaction).

### 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](mailto: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 for VPT II

#### Classification according to Regulation (EC) No 1272/2008

Acute Tox. 4 H302

Skin Corr. 1A H314

#### Classification according to 67/548/EEC or 1999/45/EC

Xn R22

C R35

For a full text of R-phrases and H-statements see Section 16.

### 2.2 Label elements

Reagent for VPT II



Pictogram:

Signal word: Danger

Hazard-determining components of labelling:  
Potassium hydroxide

Hazard statement(s):

H302 Harmful if swallowed.

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 27 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

H314 Causes severe skin burns and eye damage.

Precautionary statement(s):

P280 Wear protective gloves/protective clothing/eye protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomitiv.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

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.

### 2.3 Other hazards

Reagents are not classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

The product is a mixture.

### 3.2 Mixtures

Reagent for VPT II contains following hazardous substances:

Substance name	Content (% of weight)	CAS number EC number Index number	Classification according to		
			67/548/EEC	1272/2008	
Potassium hydroxide*	45	1310-58-3 215-181-3 019-002-00-8	Xn; R22 C; R35	Acute Tox. 4 Skin Corr. 1A	H302 H314

\*) Substance with exposure limits (exposure limits are listed in Section 8.1)

For a full text of R-phrases and 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

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, and do NOT induce vomiting. Do not attempt to neutralise.

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

Irritation and corrosion, cough, shortness of breath, vomiting, pain, collapse, death, drying-out effect. Risk of corneal clouding, risk of blindness!

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 28 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**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**

No limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Ambient fire may liberate hazardous vapours.

**5.3 Advice for firefighters**

Use self-contained breathing apparatus. Wear protective clothing. Prevent extinguishing water from contaminating surface water and ground water system.

**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. 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**

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 at a temperature between +2 °C and +25 °C. No aluminium, tin, or zinc containers.

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

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 29 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

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

CAS	Substance name	PEL	NPK-P	Note	Conversion factor for ppm
		mg/m <sup>3</sup>	mg/m <sup>3</sup>		
1310-58-3	Potassium hydroxide	1	2	I	–

*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** 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

Safety goggles.

b. Hand protection

Protective gloves - rubber, resistant to caustic substances.

c. Skin protection

Protective clothing.

d. Respiratory protection

Required when vapours or aerosols are generated.

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 for VPT II

- a. Appearance ..... Clear colourless liquid
- b. Odour ..... Odourless
- c. Odour threshold ..... Information not available
- d. pH (at 20 °C) ..... 13.2
- e. Melting point/freezing point ..... –29
- f. Initial boiling point and boiling range (°C) ..... 132
- g. Flash point (°C) ..... Information not available
- h. Evaporation rate ..... Information not available

## Safety Data Sheet

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 30 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

- 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<sup>-3</sup>) ..... 1 475
- n. Water solubility ..... Soluble
- 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 ..... Not classified as explosive
- t. Oxidizing properties ..... Information not available

### 9.2 Other information

May be corrosive to metals.

## SECTION 10: Stability and reactivity

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

### 10.1 Reactivity

Vapours may form explosive mixtures with air.

### 10.2 Chemical stability

The mixture is stable at normal temperature and pressure.

### 10.3 Possibility of hazardous reactions

Violent reactions with azides, strong acids, anhydrides, hydrocarbons, non-metallic oxides, phosphorus, halogen oxides, organic nitro compounds, halogenated hydrocarbon, halogens, alkaline earth metals, ammonium, light metals.

Gives off hydrogen by reaction with metals.

### 10.4 Conditions to avoid

No information available.

### 10.5 Incompatible materials

Glass, various plastics, metals, animal tissues.

### 10.6 Hazardous decomposition products

No information available.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### a) Acute toxicity

The mixture is harmful when ingested.

Rat oral LD <sub>50</sub> (mg·kg <sup>-1</sup> ).....	710
Rabbit dermal LD <sub>50</sub> (mg·kg <sup>-1</sup> ).....	not applicable
Rat inhalation LD <sub>50</sub> (mg·m <sup>-1</sup> ).....	not applicable
Rat inhalation TLS (g·kg <sup>-1</sup> ).....	not applicable

#### b) Irritability

Drying-out effect.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 31 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**c) Corrosion**

Reagent for VPT II causes serious skin corrosion and eye damage. Risk of blindness.

**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**

The mixture is not classified as toxic to environmental.

**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**

Harmful effect due to pH shift.

**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.

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.

**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 32 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**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, P-statements and R-phrases**

H-statements: H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.

P-statements: P280 Wear protective gloves/protective clothing/eye protection.  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomit.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
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.

R-phrases: R22 Harmful if swallowed.  
R35 Causes severe burns.



**Safety Data Sheet**

according to the European Parliament and Council Regulation (EC) No 1907/2006 (REACH), Article 31, Annex II

Date of issue: 13.3.2015

Date of review:

Page 33 of 33 pages

Version: 1.0

Name of the mixture: Reagent for ACETOIN test

**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.

*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.*