

# Safety Data Sheet

MSDS ACCORDING TO REGULATION (EC) NO. 1907/2006

Version 1.2  
 Revision Date 2012-04-24  
 Print Date 2013-03-26  
 NO COUNTRY SPECIFIC DATA

## 1. Name of compound/preparation and manufacturer

- 1.1. Name of product: 1,25-(OH)<sub>2</sub>-Vitamin D<sub>3</sub>/D<sub>2</sub> ImmunoTube® LC-MS/MS Kit
- 1.2. Number of product: KM1000
- 1.3. Manufacturer: Immundiagnostik AG  
 Stubenwald-Allee 8a  
 64625 Bensheim  
 Germany
- 1.4. Manufacturer's contact phone: +49-6251-701-900
- 1.5. Poison information center (Berlin): +49 30 19240

## 2. Composition / Declaration of components

### 2.1. Chemical characterization of the preparation:

Liquids

### 2.2. Dangerous ingredients:

| Reagent                   | CAS No  | EC No     | EC-Index No  | Classification                             | Content [%] | Special instruction see on |
|---------------------------|---------|-----------|--------------|--|-------------|----------------------------|
| MOPHA A<br>- Acetonitrile | 75-05-8 | 200-835-2 | 608-001-00-3 | F, Xn,<br>R11-20/21/22 -<br>R36            | < 50        | SHEET 2                    |
| MOPHA B<br>- Acetonitrile | 75-05-8 | 200-835-2 | 608-001-00-3 | F, Xn,<br>R11-20/21/22 -<br>R36            | > 70        | SHEET 2                    |
| SOL A<br>- Acetonitrile   | 75-05-8 | 200-835-2 | 608-001-00-3 | F, Xn,<br>R11-20/21/22 -<br>R36            | < 60        | SHEET 2                    |
| ACTSOL<br>- Formic Acid   | 64-18-6 | 200-579-1 | 607-001-00-0 | C, R10 - R35                               | > 95        | SHEET 22                   |
| TUSOL<br>- Methanol       | 67-56-1 | 200-659-6 | 603-001-00-X | F, T,<br>R11 - R23/24/25 -<br>R39/23/24/25 | < 60        | SHEET 15                   |
| ELUREAG<br>- Ethanol      | 64-17-5 | 200-578-6 | 603-002-00-5 | F, R11                                     | > 80        | SHEET 9                    |

## 1 IDENTIFICATION OF THE SUBSTANCE

Name            Acetonitrile

## 2 - Hazards Identification

Risk advice to man and the environment

- Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes.

## 3 - Composition/Information on Ingredients

Formula :                    C<sub>2</sub>H<sub>3</sub>N  
Molecular Weight :        41,05 g/mol

| Reagent      | CAS No  | EC No     | EC-Index No  | Classification              |
|--------------|---------|-----------|--------------|-----------------------------|
| Acetonitrile | 75-05-8 | 200-835-2 | 608-001-00-3 | F, Xn,<br>R11-20/21/22 -R36 |

## 4 - First Aid Measures

General advice

- Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

- If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

- Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

- Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

- Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 5 - Fire Fighting Measures

Suitable extinguishing media

- For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

- Wear self contained breathing apparatus for fire fighting if necessary.

Further information

- Use water spray to cool unopened containers.

## **6 - Accidental Release Measures**

Personal precautions

- Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

- Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

- Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

## **7 - Handling and Storage**

Handling

- Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

- Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handle and store under inert gas.

## **8 - Exposure Controls / Personal Protection**

Personal protective equipment

- Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

- Hand protection: The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.
- Eye protection: Safety glasses
- Skin and body protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9 Physical and Chemical Properties

Appearance : Form            liquid, clear  
                         Colour        colourless  
                         Odour            pungent

Safety data

|   |                        |
|---|------------------------|
| pH  | no data available      |
| Melting point                             | -48,0 °C               |
| Boiling point                             | 81,0 - 82,0 °C         |
| Flash point                               | 2,0 °C - closed cup    |
| Ignition temperature                      | 523 °C                 |
| Lower explosion limit                     | 4,4 %(V)               |
| Upper explosion limit                     | 16 %(V)                |
| Vapour pressure                           | 97,1 hPa at 20,0 °C    |
| Density                                   | 0,78 g/cm <sup>3</sup> |
| Water solubility                          | soluble                |
| Partition coefficient:<br>n-octanol/water | log Pow: -0,34         |

## 10 - Stability and Reactivity

Storage stability

- Stable under recommended storage conditions.

Conditions to avoid

- Heat, flames and sparks.

Materials to avoid

- acids, Bases, Oxidizing agents, Reducing agents, Alkali metals

Hazardous decomposition products

- Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO<sub>x</sub>), Hydrogen cyanide (hydrocyanic acid)

## 11 - Toxicological Information

### ACUTE TOXICITY

LD50 Oral - rat - 2.460 mg/kg

LC50 Inhalation - rat - 8 h - 7551 ppm

Remarks: Behavioral: Altered sleep time (including change in righting reflex).

Behavioral: Convulsions or effect on seizure threshold. Blood: Hemorrhage.

LD50 Dermal - rabbit - 2.000 mg/kg

### Irritation and corrosion

Skin - rabbit - Mild skin irritation

Eyes - rabbit - Severe eye irritation

### Sensitisation

no data available

### Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

### Signs and Symptoms of Exposure

Treat as cyanide poisoning., Always have on hand a cyanide first-aid kit, together with proper instructions., The onset of symptoms is generally delayed pending conversion to cyanide., Nausea, Vomiting, Diarrhoea, Headache, Dizziness, Rash, Cyanosis, excitement, depression, Drowsiness, impaired judgment, Lack of coordination, stupor, death

### Potential Health Effects

|               |  |
|---------------|--|
| Inhalation    | Harmful if inhaled. May cause respiratory tract irritation.  |
| Skin          | Harmful if absorbed through skin. May cause skin irritation. |
| Eyes          | Causes eye irritation.                                       |
| Ingestion     | Harmful if swallowed   |
| Target Organs | Lungs, Blood, Kidney, Liver, Central nervous system,         |

### Additional Information

RTECS: AL7700000

## 12 - Ecological Information

Elimination information (persistence and degradability)  
no data available

Ecotoxicity effects

|  |  |
|--|--|
| Toxicity to fish                                     | LC50 - Pimephales promelas (fathead minnow) - 1.640,00 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates. | EC50 - Daphnia magna (Water flea) - 3.600,00 mg/l - 48 h           |
|  | NOEC - Daphnia magna (Water flea) - 640 mg/l - 14 d                |

Further information on ecology  
No data available.

## 13 - Disposal Considerations

Product

- Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

- Dispose of as unused product.

## 14 - Transport Information

RID/ADR

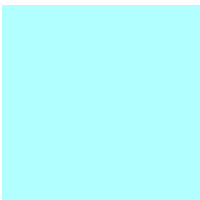
UN-Number: 1648  
Class: 3  
Packing group: II  
Proper shipping name: ACETONITRILE

IMDG

UN-Number: 1648  
Class: 3  
Packing group: II EMS-No: F-E, S-D  
Proper shipping name: ACETONITRILE  
Marine pollutant: No

IATA

UN-Number: 1648  
Class: 3  
Packing group: II  
Proper shipping name: Acetonitrile



## 15 - Regulatory Information

Labelling according to EC Directives

EC Label

Hazard symbols

|    |                  |
|----|------------------|
| F  | Highly flammable |
| Xn | Harmful          |

R-phrase(s)

|           |  |
|-----------|--|
| R11       | Highly flammable   |
| R20/21/22 | Harmful by inhalation, in contact with skin and if swallowed |
| R36       | Irritating to eyes   |

S-phrase(s)

|        |   |
|--------|---|
| S16    | Keep away from sources of ignition - No smoking |
| S36/37 | Wear suitable protective clothing and gloves    |

## 1 - IDENTIFICATION OF THE SUBSTANCE

Product Name            Formic acid

## 2 - Hazards Identification

Risk advice to man and the environment  
Flammable. Causes severe burns.

## 3 - Composition/Information on Ingredients

Formula:                    CH<sub>2</sub>O<sub>2</sub>  
Molecular Weight:        46,03 g/mol

| Reagent     | CAS No  | EC No     | EC-Index No  | Classification |
|-------------|---------|-----------|--------------|----------------|
| Formic acid | 64-18-6 | 200-579-1 | 607-001-00-0 | C, R10 - R35   |

## 4 - First Aid Measures

General advice

- Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

- If breathed in, move person into fresh air. If not breathing give artificial respiration  
Consult a physician.

In case of skin contact

- Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

- Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

- Do NOT induce vomiting. Never give anything by mouth to an unconscious person.  
Rinse mouth with water. Consult a physician.

## 5 - Fire Fighting Measures

Suitable extinguishing media

- For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

- Wear self contained breathing apparatus for fire fighting if necessary.



Further information

- Use water spray to cool unopened containers.

## **6 - Accidental Release Measures**

Personal precautions

- Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

- Do not let product enter drains.

Methods for cleaning up

- Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

## **7 - Handling and Storage**

Handling

- Avoid inhalation of vapour or mist.
- Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

- Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Moisture sensitive.

## **8 - Exposure Controls / Personal Protection**

Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Eye protection: Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## **9 Physical and Chemical Properties**

Appearance:   Form     liquid  
                  Colour    colourless

### Safety data

|   |   |
|---|---|
| pH  | 2,2 at 2,2 g/l at 20 °C                     |
| Melting point                             | 8,5 °C                                      |
| Boiling point                             | 100,80 at 1.013 hPa                         |
| Flash point                               | 48,0 °C - closed cup                        |
| Ignition temperature                      | 540 °C                                      |
| Lower explosion limit                     | 18 %(V)                                     |
| Upper explosion limit                     | 57 %(V)                                     |
| Vapour pressure                           | 42, hPa at 20,0 °C<br>169,99 hPa at 50,0 °C |
| Density                                   | 1,200 g/cm <sup>3</sup>                     |
| Water solubility                          | completely miscible                         |
| Partition coefficient:<br>n-octanol/water | log Pow: -0,54                              |

## **10 - Stability and Reactivity**

### Storage stability

- Stable under recommended storage conditions.

### Conditions to avoid

- Heat, flames and sparks.

### Materials to avoid

- Strong oxidizing agents, Strong bases, Powdered metals

### Hazardous decomposition products

- Hazardous decomposition products formed under fire conditions. - Carbon oxides

## **11 - Toxicological Information**

### ACUTE TOXICITY

LD50 Oral - rat - 1.100 mg/kg

LC50 Inhalation - rat - 4 h - 4.7 mg/ml

### Irritation and corrosion

Skin - rabbit – Severe skin irritation

Eyes- rabbit- Severe eye irritation

#### Sensitisation

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

#### Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin. Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

#### Potential Health Effects

|               |   |
|---------------|---|
| Inhalation    | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| Skin          | May be harmful if absorbed through skin. Causes severe skin burns.  |
| Eyes          | Causes severe eye burns.  |
| Ingestion     | May be harmful if swallowed. Causes severe burns..  |
| Target Organs | Blood, Central nervous system, Liver, Kidney,   |

#### Additional Information

RTECS: LQ4900000

### **12 - Ecological Information**

#### Elimination information (persistence and degradability)

Biodegradability      Result > 90 % - Readily biodegradable.

#### Ecotoxicity effects

|  |   |
|--|---|
| Toxicity to fish                                     | LC50 - <i>Leuciscus idus</i> (Golden orfe) – 46 - 100 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates. | EC50 - <i>Daphnia magna</i> (Water flea) – 34,2 mg/l - 48 h       |
| Toxicity to bacteria                                 | <i>Pseudomonas putida</i> . – 46,7 mg/l - 17 h                    |

#### Further information on ecology

Biochemical Oxygen      86 mg/g  
Chemical Oxygen      348 mg/g

### **13 - Disposal Considerations**

#### Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

- Dispose of as unused product.

## 14 - Transport Information

### ADR/RID

UN-Number: 1779 Class: 8 (3) Packing group: II  
Proper shipping name: FORMIC ACID

### IMDG

UN-Number: 1779 Class: 8(3) Packing group: II EMS-No: F-E, S-C  
Proper shipping name: FORMIC ACID  
Marine pollutant: No

### IATA

UN-Number: 1779 Class: 8(3) Packing group: II  
Proper shipping name: Proper shipping name: FORMIC ACID

## 15 - Regulatory Information

Labelling according to EC Directives

EC Label

Hazard symbols

|   |           |
|---|-----------|
| C | Corrosive |
|---|-----------|

R-phrases(s)

|     |                      |
|-----|----------------------|
| R10 | Flammable.           |
| R35 | Causes severe burns. |

S-phrases(s)

|     |   |
|-----|---|
| S23 | Do not breathe gas/fumes/vapour/spray.  |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.               |
| S45 | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |

## Disclaimer:

Immundiagnostik AG provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Immundiagnostik AG makes no representations or warranties. Either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Immundiagnostik AG will not be responsible for damages resulting from use of or reliance upon this information.