**Magnezium XL FS**

Diagnostic reagent for quantitative determination of magnesium in serum or plasma on DiaSys respons®920

**Order Information**
- Cat. No. 1 4610 99 10 921
- 4 containers for 120 determinations each

**Method**
- Photometric test using xylidyl blue

**Principle**
- Magnesium ions form a purple colored complex with xylidyl blue in alkaline solution. In presence of GEDTA, which complexes calcium ions, the reaction is specific. The intensity of the purple color is proportional to the magnesium concentration.

**Reagents**
- **Components and Concentrations**
  - Ethanolamine: pH 11.0, 750 mmol/L
  - GEDTA (Glycyletherdiamine tetraacetic acid): 60 µmol/L
  - Xylidyl blue: 110 µmol/L

**Storage Instructions and Reagent Stability**
- The reagent is stable up to the end of the indicated month of expiry, if stored at 2 – 8°C and contamination is avoided. Do not freeze the reagent!

**Warnings and Precautions**
1. **Reagent:** Danger. H315 Causes skin irritation. H318 Causes serious eye damage. P264 Wash hands and face thoroughly after handling. 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. P310 Immediately call a poison center or doctor/physician.
2. To avoid carryover interference, please take care of efficient washing especially after use of interfering reagents. Please refer to the DiaSys respons®920 Carryover Pair Table. Carryover pairs and automated washing steps with the recommended cleaning solution can be specified in the system software. Please refer to the user manual.
3. In very rare cases, samples of patients with gammapathy might give falsified results [8].
4. Please refer to the safety data sheets and take the necessary precautions for the use of laboratory reagents. For diagnostic purposes, the results should always be assessed with the patient’s medical history, clinical examinations and other findings.
5. For professional use only!

**Waste Management**
- Please refer to local legal requirements.

**Reagent Preparation**
- The reagent is ready to use. The bottles are placed directly into the reagent rotor.

**Specimen**
- Serum or plasma (do not use EDTA plasma!

**Calibrators and Controls**
- DiaSys TruCal U calibrator is recommended for calibration. The assigned values of the calibrator have been made traceable to the reference method Atomic Absorption Spectrometry (AAS). For internal quality control DiaSys TruLab N and P controls should be assayed. Each laboratory should establish corrective action in case of deviations in control recovery.

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Kit size</th>
<th>TruCal U</th>
<th>5 9100 99 10 063</th>
<th>20 x 3 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TruLab N</td>
<td>5 9000 99 10 064</td>
<td>6 x 3 mL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TruLab P</td>
<td>5 9050 99 10 061</td>
<td>6 x 5 mL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Performance Characteristics**
- Measuring range up to 5 mg/dL magnesium (in case of higher concentrations re-measure samples after manual dilution with NaCl solution (9 g/L) or use rerun function).
- Limit of detection**: 0.2 mg/dL magnesium
- On-board stability: 3 weeks
- Calibration stability: 3 weeks

**Interferences < 10% by**
- Ascorbate up to 30 mg/dL
- Bilirubin up to 40 mg/dL
- Calcium up to 25 mg/dL
- Lipemia (triacylglycerides) up to 1600 mg/dL
- Hemolysis interferes because magnesium is released by erythrocytes [2].

For further information on interfering substances refer to Young DS [2].

**Precision**
- **Within run (n=20)**
  - Sample 1: 1.79
  - Sample 2: 2.94
  - Sample 3: 4.53
- **Coefficient of variance [%]**
  - 2.59
  - 2.75
  - 1.53
- **Between run (n=20)**
  - Sample 1: 1.90
  - Sample 2: 2.67
  - Sample 3: 4.78
- **Coefficient of variance [%]**
  - 4.13
  - 2.48
  - 2.48

**Reference Range**
- **Neonates**
  - Men: 1.8 – 2.6 mg/dL
  - Women: 1.9 – 2.5 mg/dL
- **Children**
  - Men: 1.8 – 2.6 mg/dL
  - Women: 1.9 – 2.5 mg/dL
- **Women**
  - Men: 1.8 – 2.6 mg/dL
  - Women: 1.9 – 2.5 mg/dL

**Conversion Factor**
- Magnesium [mg/dL] x 0.4114 = Magnesium [mmol/L]

**Literature**

**Manufacturer**
- DiaSys Diagnostic Systems GmbH
  - Alte Strasse 9   65598 Holzheim   Germany
## Magnesium XL FS

### Application for serum and plasma

<table>
<thead>
<tr>
<th>Test Details</th>
<th>Test Volumes</th>
<th>Reference Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test : MG</td>
<td></td>
<td>Auto Run</td>
</tr>
<tr>
<td>Report Name  : Magnesium XL</td>
<td></td>
<td>Online Calibration</td>
</tr>
<tr>
<td>Unit : mg/dL</td>
<td>Decimal Places : 2</td>
<td>Cuvette Wash</td>
</tr>
<tr>
<td>Wavelength-Primary : 546</td>
<td>Secondary : 700</td>
<td>Total Reagents : 1</td>
</tr>
<tr>
<td>Assay Type : 1-Point</td>
<td>Curve Type : Linear</td>
<td>Reagent R1 : MG R1</td>
</tr>
<tr>
<td>M1 Start : 0</td>
<td>M1 End : 0</td>
<td>Reagent R2 :</td>
</tr>
<tr>
<td>M2 Start : 33</td>
<td>M2 End : 33</td>
<td></td>
</tr>
<tr>
<td>Sample Replicates : 1</td>
<td>Standard Replicates : 3</td>
<td>Consumables/Calibrators :</td>
</tr>
<tr>
<td>Control Replicates : 1</td>
<td>Control Interval : 0</td>
<td>Blank/Level 0 : *</td>
</tr>
<tr>
<td>Reaction Direction : Increasing</td>
<td>React. Abs. Limit : 0.0000</td>
<td>Calibrator 1 : *</td>
</tr>
<tr>
<td>Prozone Limit % : 0</td>
<td>Prozone Check : Lower</td>
<td></td>
</tr>
<tr>
<td>Linearity Limit % : 0</td>
<td>Delta Abs./Min. : 0.0000</td>
<td></td>
</tr>
<tr>
<td>Technical Minimum : 0.20</td>
<td>Technical Maximum : 5.00</td>
<td></td>
</tr>
<tr>
<td>$Y = aX + b$</td>
<td>$a = 1.0000$</td>
<td>$b = 0.0000$</td>
</tr>
</tbody>
</table>

* Enter calibrator value.

### Test Details

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<tr>
<td>Test : MG</td>
<td></td>
<td>Auto Run</td>
</tr>
<tr>
<td>Sample Type : Serum</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Sample Volumes

<table>
<thead>
<tr>
<th>Normal</th>
<th>Increase</th>
<th>Decrease</th>
<th>Standard Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.00 µL</td>
<td>6.00 µL</td>
<td>2.00 µL</td>
<td>2.00 µL</td>
</tr>
</tbody>
</table>

### Reagent Volumes and Stirrer Speed

<table>
<thead>
<tr>
<th>RGT-1 Volume</th>
<th>R1 Stirrer Speed</th>
<th>RGT-2 Volume</th>
<th>R2 Stirrer Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>180 µL</td>
<td>High</td>
<td>0 µL</td>
<td>0</td>
</tr>
</tbody>
</table>

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<td></td>
<td>Auto Run</td>
</tr>
<tr>
<td>Sample Type : Serum</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Reference Range

<table>
<thead>
<tr>
<th>Lower Limit</th>
<th>Upper Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Limit</td>
<td>(mg/dL)</td>
</tr>
<tr>
<td>(mg/dL)</td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>1.80</td>
</tr>
<tr>
<td>Panic</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Sample Types

- Serum
- Urine
- CSF
- Plasma
- Whole Blood
- Other