Magnesium sulfate

Section: 5. Medicines for neurological disorders > 5.1. Medicines for central nervous system disorders > 5.1.1. Antiseizure medicines

ATC codes: B05XA05

Indication	Severe pre-eclampsia ICD11 code: JA24.1
Medicine type	Chemical agent
List type	Core
Additional notes	For use in eclampsia and severe pre-eclampsia and not for other convulsant disorders.
Formulations	**Parenteral > General injections > IV:** 500 mg per mL in 2 mL ampoule (equivalent to 1 g in 2 mL; 50% weight/volume) **Parenteral > General injections > IM:** 500 mg per mL in 10 mL ampoule (equivalent to 5 g in 10 mL; 50% weight/volume)
EML status history	First added in 1995 (TRS 867) Changed in 1997 (TRS 882) Changed in 1999 (TRS 895) Changed in 2003 (TRS 920) Changed in 2015 (TRS 994)
Sex	All
Age	Adolescents and adults
Therapeutic alternatives	The recommendation is for this specific medicine
Patent information	Patents have expired in most jurisdictions Read more about patents.
Wikipedia	Magnesium sulfate
DrugBank	Magnesium sulfate

Summary of evidence and Expert Committee recommendations

An application was submitted by the Availability of Quality Maternal Health Products (AQMHP) Working Group, Maternal Health Technical Resources Team, UN Commission on Life Saving Commodities for Women and Children, requesting a revision of the language used to describe magnesium sulfate on the EML. An expert review of the application was prepared by one member of the Expert Committee. No public comments on the application were received. Magnesium sulfate is currently included on the 18th Model List as: Injection: 500 mg/ml in 2-ml ampoule; 500 mg/ml in 10-ml ampoule. The application proposed revising the description of the listed formulations to include additional information as follows: Injection: 0.5 g/ml in 2-ml ampoule (1 g in 2 ml; 50% w/v); 0.5 g/ml in 10-ml ampoule (5 g in 10 ml; 50% w/v). No other changes were requested. The rationale given for the suggested changes was that, in many international and national clinical guidelines, the concentration of magnesium sulfate solutions required for treatment is specified as a percentage. It is claimed that some providers have difficulty understanding how much magnesium sulfate this represents in a specific volume of water and there is concern that this confusion may lead to dosing errors, especially in emergency situations. It was asserted in the application that the proposed additional information in the magnesium sulfate entry in the EML will provide improved clarity and understanding in relation to the contents of magnesium ampoules produced commercially. The Expert

Committee noted that dosing schedules in WHO’s Managing complications of pregnancy and childbirth: a guide for midwives and doctors (1) include the recommended dose of magnesium sulfate both in grams (g) and as a percentage strength of magnesium sulfate solution. The Expert Committee also noted that WHO guidelines recommend magnesium sulfate for the prevention of eclampsia in women with severe preeclampsia and for treatment of women with eclampsia, in preference to other anticonvulsants (2). Magnesium sulfate has been included on the EML for use in eclampsia and severe pre-eclampsia since 1995. The Expert Committee considered that the requested amendments to the description of magnesium sulfate on the EML were reasonable and may serve to provide greater clarity for providers. The Committee considered further clarity could be achieved with the addition of the words “equivalent to” and by disambiguation of “w/v” to “weight/volume” and therefore recommended that the listing for magnesium sulfate be amended to read as follows: magnesium sulfate* Injection: 0.5 g/mL in 2-mL ampoule (equivalent to 1 g in 2 mL; 50% weight/volume); 0.5 g/mL in 10 mL ampoule (equivalent to 5 g in 10 mL; 50% weight/volume) * For use in eclampsia and severe pre-eclampsia and not for otherconvulsant disorders. References: 1. Managing complications in pregnancy and childbirth : a guide for midwives and doctors. Geneva: World Health Organization; 2007. 2. WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia. Geneva: World Health Organization; 2011.

