

"Isotonic Energy & Mineral Electrolyte Supplement"

Re-Issue Date: 04/04/17

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Rumelyte Plus is a balanced isotonic energy and mineral electrolyte supplement. When mixed with water it forms a gel. When fed as directed it replaces lost salts and fluids in calves and foals.

Rumelyte Plus has been formulated to comply with the latest recommendations in veterinary research.

Contains: Dextrose; Sodium and Potassium salts, Alkalis (Bicarbonate and Citrate) salts, Functional Fibre, Vitamin C plus added Psyllium Husk Fibre.

Rumelyte Plus provides:

Glucose – to aid Na and water absorption

Na – to replenish extracellular fluid losses

K – to offset faecal losses

SID – "Strong Ion Difference" to aid acid-base balance in the blood

Vitamin C – as a natural anti-oxidant

Alkalis agent – bicarbonate and citrate

Although all alkalis agents have similar effects, bicarbonate is known to be effective in addressing blood acidosis often associated with sick calves.

Na – to replenish extracellular fluid losses

This product does NOT contain Restricted Animal Material.

ISOTONIC SOLUTION

Commercial electrolyte preparations vary in the amount of particles dissolved in the solution. Most products are "hypertonic" containing a very large amount of glucose in the preparation. This will draw water out of the intestine instead of into it in order to equalize osmolality on both sides of the intestine cell wall.

In contrast, "isotonic" solutions have a similar amount of particles in the solution as is normally found in the bloodstream. This prevents water being drawn out of from the body into the intestine after ingestion due to osmotic pressure. Isotonic solutions provide a better option for restoring lost fluids and electrolytes for routine use.

When mixed as directed **Rumelyte Plus** provides an isotonic solution for infant animals.

Beef calves and foals that continue to suckle or dairy calves with a good appetite need isotonic solutions.

RUMELYTE PLUS					Rumelyte Plus isotonic 60g/1.5L compliance	Product X hypotonic 60g/1.5L compliance
Selected OTC Product Comparison:						
parameter	units	recommendation:				
		min.	max			
isotonic	mosm/L	300	312		✓	✗
osmolality	mosm/L	300	600		✓	✗
Glucose	mM/L	110	140		✓	✗
Na	mM/L	90	130		✓	✗
alkalinizing agent	mM/L	40	80		✓	✓
glucose:Na ratio	mM/mM	1	3		✓	✓
K	mM/L	10	20		✓	✓
Cl	mM/L	40	50		✓	✓
Na:Cl ratio	mM/mM	1.5			✓	✓
SID = Na+K-Cl	mEq/L	60	80		✓	✗
contains Psyllium Husk (gelling agent)					✓	✓
Compliance:					OK	Not OK

BENEFITS OF PSYLLIUM:

Psyllium (or Ispaghula) husk contains a mucilage compound and is used as a soluble dietary fibre.

The mechanical action of psyllium mucilage is to absorb excess water while maintaining normal bowel movement. When mixed with water, **Rumelyte Plus** forms a gel, which slows the transit of material through the intestine to aid the absorption of energy and mineral salts as well as the retention of excess water.

DIRECTIONS FOR USE:

To be fed as a supplement in between whole milk or milk replacer feeds.

Bicarb solutions interfere with milk digestion – for best results feed separately to milk feeds.

CAUTION:

Do not feed with oral medications.

If the animal displays weak reflexes or refuses to drink, seek immediate veterinary advice.

MIXING RATE:

FEED IMMEDIATELY AFTER MIXING.

To prepare isotonic gel solution, mix 1 part powder to 25 parts warm drinking water.

Dissolve 60g (1 heaped scoop) into 1.5L of clean warm water (40°C) or 600g per 15L.

1 heaped scoop approximates 60g powder.

CALVES & FOALS:

1 st feed (0 hours)	1.5L of gel solution
2 nd feed (12 hours)	1.5L of gel solution
3 rd feed (24 hours)	1.5L of gel solution
4 th feed (36 hours)	3 hours after a milk feed, offer 1L of gel solution (40g or ¾ scoop in 1L of water)

STORAGE:

Store below 25°C (air conditioning) in a dry place, out of direct sunlight. Protect from air and moisture.

Keep container sealed at all times. Reseal container immediately after dispensing.

Product will absorb moisture from air (if left unsealed) which may cause crusting on the surface or hardening of powder. Crusting or hardening of powder does not affect product effectiveness.

WITHHOLDING PERIODS: NIL

PACK SIZES:

1.5, 4, 8kg plastic buckets

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10 reasons to feed Rumelyte-Plus energy and mineral electrolyte supplements to calves and foals

1. **It complies with the "Gold Standard" of current veterinary research.** *Veterinary researchers Constable and Nappert have listed recommendations for electrolyte solutions which are considered the 'Gold Standard' for reviewing electrolyte products. While all commercially available products contain sufficient glucose (aids sodium and water absorption), a recent review showed that the majority of Australian products don't supply enough sodium (critical electrolyte); use bicarbonate as the alkalising agent but at lower than required levels; and contain little or no potassium. **Rumelyte-Plus** is a balanced formulation with the best fit versus the "Gold Standard". It provides higher levels of sodium and alkalising agent, sufficient levels of potassium than existing historical formulations readily available from rural resellers.*
2. **"Bicarbonate-Citrate" Alkalisers.** *Although all alkalising agents (bicarbonate, citrate, propionate acetate,) have similar effects, bicarbonate is well known for its ability to rapidly address blood acid-base balance often associated with fluid loss. Since bicarbonate-citrate can affect milk digestion is it always best practice to feed **Rumelyte-Plus** electrolyte solutions in between milk feeds.*
3. **Isotonic solutions are best for restoring lost fluids quickly.** *For prevention or routine application in infant animals with only mild fluid loss, isotonic solutions are preferred. Animals under higher hydration stress will require hypertonic solutions which provide higher nutritional support with higher glucose levels as well added electrolytes while still complying with the maximum parameters of the "Gold Standard" and may require veterinary attention. When feeding isotonic solutions separately to milk feeds, **Rumelyte-Plus** is effective in replacing lost fluids and electrolytes, without interfering with milk digestion.*
4. **It is a quality electrolyte supplement as defined by "Strong Ion Difference" or "SID".** *"Strong ion theory" encourages the use of supplements that deliver an excess of strong cations (sodium and potassium) relative to the concentration of strong anions (chloride) in order to help correct a portion of the acid-base balance in the blood. "Strong Ion Difference" or "SID" is calculated as $[Na^+] + [K^+] - [Cl^-]$ and should fall in the range of 60-80 mEq/L for a quality oral electrolyte product. While most commercial products fall well short (e.g. 12-28mEq/L) of the required SID range (60-80mEq/L), **Rumelyte-Plus** complies with the SID recommendations providing 60 mEq/L when mixed as directed.*
5. **It provides sufficient sodium to replenish extracellular fluid losses.** *After water, sodium is considered the most important electrolyte. Most commercial products are below desired Sodium levels. **Rumelyte-Plus** provides sufficient sodium and complies with the "Gold Standard" for Isotonic solutions. Inclusion of sufficient sodium is also confirmed by SID values within the required 60-80mEq/L range.*
6. **It provides-sufficient alkalising agent to control bloodstream pH.** *Most commercial products are below desired levels for alkalising agent. **Rumelyte-Plus**, using bicarbonate-citrate as the primary alkalising agent, provides sufficient levels and complies with the "Gold Standard".*
7. **It provides sufficient Potassium to cover faecal losses.** *A number of commercial (OTC) products exclude this important electrolyte whereas others provide excessive amounts which is counterproductive especially where there is a risk of hyperkalaemia. **Rumelyte-Plus** provides adequate levels to at least meet the minimum requirements of the 'Gold Standard'.*
8. **Contains Vitamin C as a natural anti-oxidant.**
9. **Rumelyte-Plus is the only balanced psyllium based electrolyte supplement on the market!**
10. **Rumelyte-Plus contains Psyllium husk (plant derived mucilage compound) for water retention.** *When mixed with warm water the Psyllium Husk component of **Rumelyte-Plus** forms a gel. It slows the transit of material through the intestine to aid the absorption of energy and mineral salts, retention of excess water and maintains a firm stool.*