

## "Isotonic Energy & Mineral Electrolyte Supplement"

Re-Issue Date: 04/04/17

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**Rumelyte** is a balanced isotonic energy and mineral electrolyte supplement that replaces lost salts and fluids in calves, lambs, kids, and foals.

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

**Contains:** Dextrose; Sodium and Potassium salts, Alkalisising (Bicarbonate and Citrate) salts, Functional Fibre and Vitamin C.

**Rumelyte** 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

**Alkalisising agent** – bicarbonate and citrate

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

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** provides an isotonic solution for routine use in drinking water for infant animals. Beef calves, lambs and foals that continue to suckle or dairy calves with a good appetite need isotonic solutions.

RUMELYTE				Selected OTC Product Comparison:							
parameter	units	recommendation:		Rumelyte isotonic 60g/2L = 3.0% compliance	Product A hypertonic 100g/2L = 5% compliance	Product B hypertonic 100g/2L = 5% compliance	Product C hypertonic 100g/2L = 5% compliance				
		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	✓	✗	✗	✗				
Compliance:				OK	Not OK - limit	Not OK					

### DIRECTIONS FOR USE:

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

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

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

All solutions should be consumed within 24 hours of mixing.

### MIXING RATE:

To prepare isotonic solution, mix 1 part powder to 33 parts drinking water.

Dissolve 60g (1 heaped scoop) into 2L of clean warm water (40°C) or 600g per 20L or 6kg per 200L.

1 heaped scoop approximates 60g powder.

### CALVES & FOALS:

Offer 2L of RUMELYTE isotonic solution per head 2-3 times per day for 2-3 days or until hydration is normal.

### LAMBS & KIDS:

Offer 100-200mL of RUMELYTE isotonic solution per head up to 6 times per day for 2-3 days or until hydration is normal.

### 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:

2, 4, 10, 20kg plastic buckets

### COST-EFFECTIVENESS

Many commercial electrolyte preparations have a mixing rate of 100g/2L to provide an unbalanced hypertonic solution.

By balancing the key ingredients to comply with the latest research, **Rumelyte** replaces lost fluids and mineral electrolytes more rapidly with a 60g/2L mixing rate.

As a result, **Rumelyte** provides 40% more calf feeds per kg than historical commercial brands.

Rumelyte is a registered trademark of ProviCo.

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### 10 reasons to feed Rumelyte energy and mineral electrolyte supplement to calves, lambs, kids 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** 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 it is always best practice to feed **Rumelyte** 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** 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** 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** 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**, 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** 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 provides 40% more doses per kg than historical brands.** *Less is really More!*
- 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, the retention of excess water and maintains a firm stool.*