

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 1 of 10

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

RANVET MACROFOL VITAMIN B12

SYNONYMS

Folic Acid Injection For Horses

PRODUCT USE

Prevention and treatment of Macrocytic Anaemia, Vitamin B12 and Folic Acid Deficiencies in horses.

SUPPLIER

Company: Ranvet Pty Ltd (ACN: 001 606 033)

Address:

10-12 Green Street

East Botany

NSW, 2019

AUS

Telephone: +61 2 9666 1744

Emergency Tel: +61 418 493 533 A/H

Fax: 02 9666 1755

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

Not considered a dangerous substance according to directive 67/548/EEC, point 4; and not hazardous according to OSHA 29 CFR 1910.1200 (USA).

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

According to the Criteria of NOHSC, and the ADG Code.

POISONS SCHEDULE

None

RISK

SAFETY

Do not breathe gas/fumes/vapour/spray.
Avoid contact with skin.

continued...

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 2 of 10

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
folic acid	59-30-3	0.9-1.3
cyanocobalamin	68-19-9	<1
performance additives nonhazardous		<1
water	7732-18-5	>60

Section 4 - FIRST AID MEASURES

SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

If this product comes in contact with eyes:

- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.

continued...

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 3 of 10

Section 5 - FIRE FIGHTING MEASURES ...

- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

- Non combustible.
 - Not considered to be a significant fire risk.
 - Expansion or decomposition on heating may lead to violent rupture of containers.
 - Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).
 - May emit acrid smoke.
- Decomposition may produce toxic fumes of.
carbon dioxide (CO₂).
nitrogen oxides (NO_x).
phosphorus oxides (PO_x).
May emit poisonous fumes.

FIRE INCOMPATIBILITY

Avoid contamination with strong oxidising agents as ignition may result

HAZCHEM

None

Personal Protective Equipment

PERSONAL PROTECTION EQUIPMENT
Breathing apparatus.
Chemical splash suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labelled container for waste disposal.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.

continued...

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 4 of 10

Section 7 - HANDLING AND STORAGE ...

- Use in a well-ventilated area.
- When handling DO NOT eat, drink or smoke.
- Always wash hands with soap and water after handling.
- Avoid physical damage to containers.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.

SUITABLE CONTAINER

Ampoule. Vial.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.
Avoid contamination of water, foodstuffs, feed or seed.

STORAGE REQUIREMENTS

- Store in original containers.
 - Keep containers securely sealed.
 - Store in a cool, dry, well-ventilated area.
 - Store away from incompatible materials and foodstuff containers.
 - Protect containers against physical damage and check regularly for leaks.
 - Observe manufacturer's storing and handling recommendations.
- Store below 25 degC.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

INGREDIENT DATA

FOLIC ACID:

No exposure limits set by NOHSC or ACGIH
CEL TWA: 0.8 mg/m³ [Roche]

CYANOCOBALAMIN:

cobalt, as metal dusts and fumes, as Co (A.Wt: 58.93)

ES TWA: 0.05 mg/m³ sensitiser

TLV TWA: 0.02 mg/m³ A3

CAUTION: This substance has been classified by the ACGIH as A3 Animal Carcinogen (at relatively high doses)

IDLH Level: 20 mg/m³ as Co

In view of the serious effects seen in experimental animals after a relatively short exposure period at 0.1 mg/m³ the recommended TLV-TWA is thought to reduce the significant risk of material impairment of health posed by respiratory disease and pulmonary sensitization which have been shown to occur at higher levels of exposure. The value does not apply generally to cobalt compounds. A significant increase in the risk of lung cancer was reported among workers involved in cobalt production (with concomitant exposure to nickel and arsenic) and hard-metal workers with documented exposure to cobalt-containing dusts. A significant increase in lung cancer risk has been observed in workers whose

continued...

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 5 of 10

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

exposure began more than 20 years previously. A number of single cases of malignant tumours, mostly sarcomas, have been reported at the site, following implant of cobalt-containing orthopedic implants.

TRK: 0.5 mg/m³ (in the form of cobalt metal, cobalt oxide, and cobalt sulfide) during production of cobalt powder and catalysts: hard metal (tungsten carbide) and magnet production (processing of powder, machine pressing and mechanical processing of unsintered articles) : 0.1 mg/m³ (others) measured as inhalable fraction of the aerosol

The technical exposure limit, TRK (Technische Richtkonzentrationen), defines the airborne concentration of named carcinogenic materials which is the minimum possible given the state of current technologies.

TRK values are assigned only for materials for which there is no current MAK (German exposure standard). Observance of the TRK value is intended to reduce the risk of adverse effects on health but does NOT completely eliminate it.

Since no threshold doses can be determined for carcinogens, health considerations require that the exposure limits be kept as far as possible below the TRK and that the TRK value be gradually reduced. The limitation of exposure peaks is regulated as follows;

Short-term exposure limit: 5 x TRK

Short-term exposure duration: 15 min/average

Frequency per work shift: 5 times

Interval: 1 hour. Report No. 35 1999, Deutsche Forschungsgemeinschaft.

CEL TWA: 0.6 mg/m³

[Roche]

The compound is given therapeutically at doses of 1 to 1000 ug by the intramuscular, subcutaneous and oral route. There is no report of adverse reaction in handling the compound. A no-observable-effect level was not available, however, based on the low degree of toxicity and pharmacological activity of the compound an exposure level of 5 mg/m³ has been recommended by the manufacturer, in line with the respirable nuisance dust value of the ACGIH.

WATER:

No exposure limits set by NOHSC or ACGIH

PERSONAL PROTECTION

EYE

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

HANDS/FEET

Wear general protective gloves, eg. light weight rubber gloves.

OTHER

No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.
- Barrier cream.
- Eyewash unit.

continued...

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 6 of 10

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the computer-generated selection:

Substance

water		
BUT	YL	A
NEOPRE	NE	A
VIT	ON	A
P	VA	C
NATURAL RUBB	ER	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	-AUS	-
1000	50	-	-AUS
5000	50	Airline *	-
5000	100	-	-2
10000	100	-	-3
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

continued...

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 7 of 10

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear liquid; mixes with water.

PHYSICAL PROPERTIES

Liquid.
Mixes with water.

Molecular Weight: Not Applicable
Melting Range (°C): Not Available
Solubility in water (g/L): Miscible
pH (1% solution): Not Available
Volatile Component (%vol): Not Available
Relative Vapour Density (air=1): Not Available
Lower Explosive Limit (%): Not Applicable
Autoignition Temp (°C): Not Applicable
State: Liquid

Boiling Range (°C): Not Available
Specific Gravity (water=1): 1.001-1.012
pH (as supplied): Not Available
Vapour Pressure (kPa): Not Available
Evaporation Rate: Not Available
Flash Point (°C): Not Applicable
Upper Explosive Limit (%): Not Applicable
Decomposition Temp (°C): Not Available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

EYE

Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

continued...

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 8 of 10

Section 11 - TOXICOLOGICAL INFORMATION ...

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

Not normally a hazard due to non-volatile nature of product

CHRONIC HEALTH EFFECTS

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Large and continuous doses of folic acid may lower the blood concentrations of Vitamin B12. Folic hypersensitivity and fever has been reported in a 36 year old anephric (... with kidneys removed) man. Occupational asthma attributed to the inhalation of cobalt powder has been confirmed following bronchial challenge tests. Chest tightness and chronic bronchitis have been recorded in hard-metal workers exposed to cobalt. Chronic exposure to cobalt produces polycythaemia (increase in blood haemoglobin), increased production of cells of the bone marrow and thyroid gland, pericardial effusion and damage to the alpha cells of the pancreas. Chronic administration of cobaltous chloride has produced goiter, reduced thyroid activity and lowered synthesis rates and levels of cytochrome P-450, an enzymatic system responsible for chemical detoxification, in the liver. Animals also exhibit an increase in respiration, as well as tremor and convulsion. A toxic nephritis (kidney disease) may also develop. Epidemic cardiomyopathy (heart disease) among heavy beer drinkers in the 1960's in Canada, the USA and Belgium has been attributed to the addition of up to 1.5 ppm of cobalt as a foam restorative and stabiliser. Other factors are probably implicated as therapeutic doses of cobalt, up to 50 mg/day (in the treatment of refractory anaemias) do not produce this effect. Inadequate protein or vitamin intake amongst heavy drinkers, or the effects of alcohol in rendering the heart more susceptible to disease may be important. Allergic dermatitis of an erythematous papular type may also occur following occupational exposures and may also have positive skin tests. Cobalt metal dust inhalations by miniature swine resulted in early marked decrease in lung compliance and increases in septal collagen. After a one-week "sensitising period", followed by a 10-day lapse period, further exposures produced wheezing produced by hypersensitivity reactions. Single and repeated subcutaneous or intramuscular injection of cobalt powder and salts to rats may cause sarcoma at the injection site but evidence for carcinogenicity by any other route of exposure does not exist. A number of single cases of malignant tumours, mostly sarcomas, have been reported at the site of orthopedic implants containing cobalt. Though the cobalamins are generally well tolerated, allergic hypersensitivity reactions have followed the administration of the Vitamin B12 factors, cyanocobalamin and hydroxocobalamin. Vitamin B12 rapidly increases the rate of cell maturation, in vivo, and as a consequence increases the rate of nucleic acid degradation which in turn increases blood uric acid levels; this may produce gout in susceptible individuals.

Ranvet Macrofol Vitamin B12

Not available. Refer to individual constituents.

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

FOLIC ACID:

TOXICITY

Oral (rat) LD50: >8000 mg/kg*

Oral (mouse) LD50: 10000 mg/kg

IRRITATION

nil reported

continued...

RANVET MACROFOL VITAMIN B12

ChemWatch Material Safety Data Sheet
For Workplace - Small Volume Use Only.
Issue Date: Fri 7-Mar-2008

CHEMWATCH 4614-32

CD 2004/3 Page 10 of 10

Section 15 - REGULATORY INFORMATION ...

POISONS SCHEDULE

None

REGULATIONS

The following substances are found on/in Australian Inventory of Chemical Substances (AICS):

folic acid (CAS: 59-30-3)

cyanocobalamin (CAS: 68-19-9)

water (CAS: 7732-18-5)

folic acid (CAS: 59-30-3)

The following substances are found on/in folic acid (CAS: 75708-92-8) is found on the following regulatory lists::

folic acid (CAS: 59-30-3)

The following substances are found on/in Australian Inventory of Chemical Substances (AICS):

folic acid (CAS: 59-30-3)

Section 16 - OTHER INFORMATION

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.

Issue Date: Fri 7-Mar-2008

Print Date: Fri 7-Mar-2008