TOOL BOX

APPROACH ESSENTIAL FOR

Varroa mite has been in New Zealand for more than 20 years and is now considered the most significant cause of colony loss. Put simply, without treatment of hives as part of an effective varroa management program hives will collapse.

For effective varroa control beekeepers need to use all the available tools and adopt an Integrated Pest Management approach.

Elanco™

Things which must be considered include:

LABEL DIRECTIONS:

Read and understand the label.
Apply varroa control products strictly as per label.
This includes position in brood box, length of duration of strips in the hive, and most importantly the number of strips per hive.

The 2021 New Zealand colony loss survey[1] indicated 40% of beekeepers were underdosing with Bayvarol – this will inevitably lead to poor mite control and should be avoided at all costs.

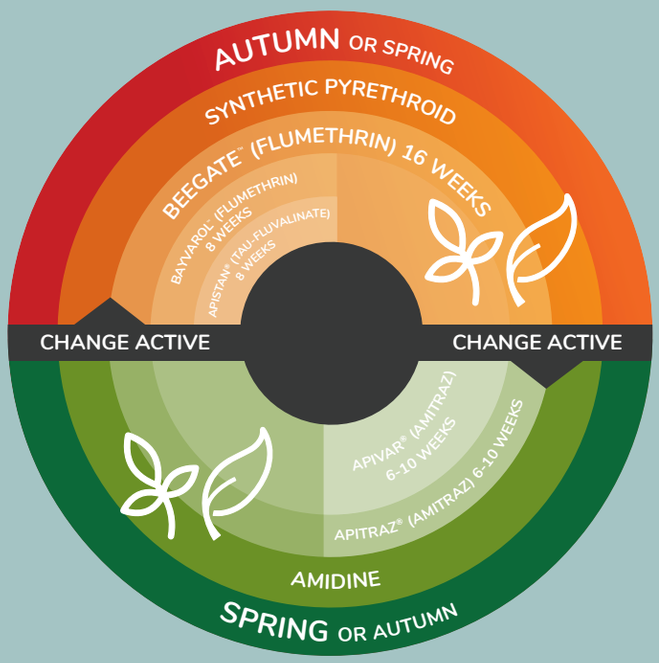
MONITORING MITE NUMBERS:

The decision of when to treat for varroa and measuring the success of any treatment program can only be done through objective measurements provided by using mite population assessment techniques such as sugar shakes or alcohol washes.

A pre-treatment count of 10 mites/300 bees indicates the hive is under severe challenge – particularly in the autumn as bee numbers begin to decrease. Monitoring will also determine the success of any treatment regime and if further treatments are required.

TREATMENT ROTATION:

The “hard” chemicals, namely synthetic pyrethroids (flumethrin (Bayvarol) and tau fluvalinate (Apistan)) and amitraz (Apivar and Apitraz), provide the cornerstone of varroa control. Along with strict compliance with label directions, rotation between chemical groups at alternate spring and autumn treatments is considered the most effective way to manage the long term effective life of these valuable products and slow the development of resistance. Repeat use of the same chemical strips time after time will inevitably lead to resistance by varroa to the active ingredient used.



Increasingly intermediate treatments between spring and autumn with other treatments such as oxalic acid, formic acid and thymol are being used to support front-line treatments.

TIMING OF TREATMENT:

Industry sales data indicates that both the spring and autumn hard chemical treatments are being implemented up to six weeks earlier than previously. The days of basing treatment simply on calendar date are gone. The timing of treatments must be based on monitoring mite numbers as described above.

REPORTING:

Based on the 2021 survey >85% of bee keepers consider their Bayvarol and amitraz treatments to be mostly successful in controlling varroa. These products are registered pesticides with the Agricultural Pesticides and Veterinary Medicines Group within the Ministry of Primary Industries and as such have a legal responsibility to report all adverse events with MPI.

If you are not happy with the performance of these products, as soon as possible, please contact your distributor with all relevant details. This will allow the manufacturers to support an investigation into any perceived product failings, including the development of varroa resistance.

HIVE AND PRODUCT MANAGEMENT:

All colonies located on the same apiary should be treated simultaneously. Inappropriate use of varroacides could result in an increased risk of development of varroa resistant to the product used and ultimately ineffective treatment and colony loss.

REMEMBER
Successful varroa control requires a continual integrated pest control approach using all of the available tools.

Reference.
1. “Varroa Appears to Drive Persistent Increases in New Zealand Colony Losses” Philip Stahlmann-Brown , Richard J. Hall , Hayley Pragert and Thomas Robertson Insects 2022, 13, 589. https://doi.org/10.3390/insects13070589

SAFETY DATA SHEET

Bayvarol Strips

Section 1. Identification

Product identifier : Bayvarol Strips

Product code : 122000001007

Other means of identification : BAYVAROL TIRAS; 6247970; 80625759; 81026506; 81381101; 81436045; 81456887; 81485658; 81548978; 81581266; 81581614; 81897573; 82057006; 82057065; 82057073; 82177613; 82211942; 82211977; 82482564; 82482718; 83917165; 85220381; 85255231; 85632450; 85643916; 85682326; 85682350; 85976346; 85976354; 86030357; 86030381; 86030896; 86031620; 86031655; 86031698; 86065703; 86065762; 86065770; 86084953; 86085046; 86085097; 86085127; 86085135; 86085143; 86175444; 86412829; 86893452; 86907992; 86924935; 87203174; 87224775; 87398234; 87401537; 90198563; 90198564; 90200509; 90202037; 90203782; 90204322; 90205145; 90206073; 90206589; 90207072; 90209343; 90210738

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Veterinary product. Pesticide.

Uses advised against : None known.

Company Name : Elanco New Zealand
106 Wiri Station Road, Manukau, Auckland 2140

Telephone number : +64 0800 352 626

Emergency telephone number : CHEMTREC 0800 293702 (Freephone)
CHEMTREC +64 9 801 0034 (Local)

Email : elanco_sds@elancoah.com

Transportation Emergency telephone number : CHEMTREC 0800 293702 (Freephone)
CHEMTREC +64 9 801 0034 (Local)

Section 2. Hazards identification

HSNO Approval Number : HSR000756

HSNO Group Standard : Not available.

HSNO Classification : DESIGNED FOR BIOCIDAL ACTION

This material is classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

This material is not classified as DANGEROUS GOODS according to criteria in New Zealand Standard 5433:2012 Transport of Dangerous Goods on Land.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
Flumethrin	≤0.1	69770-45-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Specific treatments : No specific treatment.

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Hazchem code : Not available.

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Firefighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Protective measures

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
None.	

Biological exposure indices

No exposure indices known.

Section 8. Exposure controls/personal protection

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Solid.

Colour : White.

Odour : Not available.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : 120°C (248°F)

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not applicable.

Vapour pressure : Not available.

Section 9. Physical and chemical properties and safety characteristics

Relative vapour density : Not applicable.

Relative density : Not available.

Solubility(ies) :

Media	Result
cold water	Not soluble
hot water	Not soluble

Solubility in water : Not available.

Miscible with water : No.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not applicable.

Flow time (ISO 2431) : Not available.

Particle characteristics

Median particle size : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on likely routes of exposure

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : No specific data.

Eye contact : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Flumethrin	LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rat Rat Rat	0.572 mg/l 1436 mg/kg 175 mg/kg	4 hours - -

Irritation/Corrosion

Not available.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Flumethrin	skin	Guinea pig	Not sensitizing

Potential chronic health effects

General : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Mutagenicity

Not available.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Flumethrin	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Flumethrin	Category 1	-	-

Aspiration hazard

Not available.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Flumethrin	5	1436	N/A	N/A	0.572

Section 12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic and terrestrial toxicity

Product/ingredient name	Result	Species	Exposure
Flumethrin	EC50 0.0027 mg/l IC50 0.59 mg/l Acute LC50 0.17 mg/l	Daphnia Algae Fish - Oncorhynchus mykiss	48 hours 72 hours 96 hours

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Flumethrin	-	0 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Flumethrin	-	-	Not readily

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	New Zealand - Land - road/ railway	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-

Section 14. Transport information

Packing group	-	-	-
Environmental hazards	No.	No.	No.

Additional information

IMDG : **Remarks** Article.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

HSNO Approval Number : HSR000756

HSNO Group Standard : Not available.

HSNO Classification : DESIGNED FOR BIOCIDAL ACTION

ACVM No. : P005683

Inventory list

New Zealand : All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date of revision : 6/20/2023

Date of previous issue : No previous validation

Version : 0.01

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
SGG = Segregation Group
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

As of the date of issuance, we are providing available information relevant to the handling of this material in the workplace. All information contained herein is offered with the good faith belief that it is accurate. THIS SAFETY DATA SHEET SHALL NOT BE DEEMED TO CREATE ANY WARRANTY OF ANY KIND (INCLUDING WARRANTY OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE). In the event of an adverse incident associated with this material, this safety data sheet is not intended to be a substitute for consultation with appropriately trained personnel. Nor is this safety data sheet intended to be a substitute for product literature which may accompany the finished product.

Section 16. Other information

For additional information contact:
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