

TB-MSDS-029 Fido's Fre-Itch
30004

Fido's Fre-Itch Rinse Concentrate For Dogs, Cats, Puppies, Kittens And Cage Birds

Mavlab

Chemwatch: 34-9443

Version No: 7.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Chemwatch Hazard Alert Code: 1

Issue Date: 10/12/2021

Print Date: 09/08/2022

L.GHS.AUS.EN.RISK.E

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	Fido's Fre-Itch Rinse Concentrate For Dogs, Cats, Puppies, Kittens And Cage Birds
Chemical Name	Not Applicable
Synonyms	Fido's Fre-Itch Rinse Concentrate For Dogs, Cats, Puppies, Kittens And Cage Birds; Fido's Rinse Concentrate; Manufacturer's code: P5100, P5120, P5130
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Water soluble concentrate of synergised pyrethrins for killing fleas and lice on dogs, cats, rodents and caged birds.
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Details of the supplier of the safety data sheet

Registered company name	Mavlab
Address	33 Rowland St Slacks Creek QLD 4127 Australia
Telephone	+61 7 3808 1399
Fax	+61 7 3808 4328
Website	www.mavlab.com.au
Email	info@mavlab.com.au

Emergency telephone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	+61 1800 951 288
Other emergency telephone numbers	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

ChemWatch Hazard Ratings

	Min	Max	
Flammability	0		
Toxicity	0		
Body Contact	1		0 = Minimum 1 = Low
Reactivity	0		2 = Moderate 3 = High
Chronic	0		4 = Extreme

Poisons Schedule	Not Applicable
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Classification [1]	Serious Eye Damage/Eye Irritation Category 2B, Reproductive Toxicity Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 2 *LIMITED EVIDENCE
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

Label elements

Hazard pictogram(s)	The image shows two diamond-shaped GHS hazard pictograms. The first is the Corrosive (C) pictogram, showing a liquid dripping from two test tubes onto a hand and a metal surface. The second is the Environment (E) pictogram, showing a dead tree and a dead fish.
Signal word	Warning

Hazard statement(s)

H320	Causes eye irritation.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.

*LIMITED EVIDENCE

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P280	Wear protective gloves and protective clothing.
P273	Avoid release to the environment.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P391	Collect spillage.

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
Not Available	<20	inert excipients, proprietary
113-48-4	3	<u>2-ethylhexyl bicycloheptene dicarboximide</u>
51-03-6	1.8	<u>piperonyl butoxide</u>
8003-34-7	1	<u>pyrethrum</u>
7732-18-5	balance	<u>water</u>
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available	

Continued...

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SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: † Wash out immediately with fresh running water. † Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. † Seek medical attention without delay; if pain persists or recurs seek medical attention. † Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: † Flush skin and hair with running water (and soap if available). † Seek medical attention in event of irritation.
Inhalation	† If fumes, aerosols or combustion products are inhaled remove from contaminated area. † Other measures are usually unnecessary.
Ingestion	† Immediately give a glass of water. † First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

For chronic or short term repeated exposures to pyrethrum and synthetic pyrethroids:

- † Mammalian toxicity of pyrethrum and synthetic pyrethroids is low, in part because of poor bioavailability and a large first pass extraction by the liver.
- † The most common adverse reaction results from the potent sensitising effects of pyrethrins.
- † Clinical manifestations of exposure include contact dermatitis (erythema, vesiculation, bullae); anaphylactoid reactions (pallor, tachycardia, diaphoresis) and asthma. [Eiltenhorn Barceloux]
- † In cases of skin contact, it has been reported that topical application of Vitamin E Acetate (alpha-tocopherol acetate) has been found to have high therapeutic value, eliminating almost all skin pain associated with exposure to synthetic pyrethroids. [Incitec]

SECTION 5 Firefighting measures

Extinguishing media

- † Water spray or fog.
- † Foam.
- † Dry chemical powder.
- † BCF (where regulations permit).
- † Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
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Advice for firefighters

Fire Fighting	† Alert Fire Brigade and tell them location and nature of hazard. † Wear full body protective clothing with breathing apparatus. † Prevent, by any means available, spillage from entering drains or water course. † Use water delivered as a fine spray to control fire and cool adjacent area. † Avoid spraying water onto liquid pools. † DO NOT approach containers suspected to be hot. † Cool fire exposed containers with water spray from a protected location. † If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	† Combustible. † Slight fire hazard when exposed to heat or flame. † Heating may cause expansion or decomposition leading to violent rupture of containers. † On combustion, may emit irritating/ toxic fumes. † May emit acrid smoke. † Mists containing combustible materials may be explosive. May emit corrosive fumes.
HAZCHEM	Not Applicable

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

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Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Slippery when spilt. Environmental hazard - contain spillage. <ul style="list-style-type: none"> ‣ Remove all ignition sources. ‣ Clean up all spills immediately. ‣ Avoid breathing vapours and contact with skin and eyes. ‣ Control personal contact with the substance, 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.
Major Spills	Slippery when spilt. Environmental hazard - contain spillage. Moderate hazard. <ul style="list-style-type: none"> ‣ Clear area of personnel and move upwind. ‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear breathing apparatus plus protective gloves. ‣ Prevent, by any means available, spillage from entering drains or water course. ‣ No smoking, naked lights or ignition sources. ‣ Increase ventilation. ‣ Stop leak if safe to do so. ‣ Contain spill with sand, earth or vermiculite. ‣ Collect recoverable product into labelled containers for recycling. ‣ Absorb remaining product with sand, earth or vermiculite. ‣ Collect solid residues and seal in labelled drums for disposal. ‣ Wash area and prevent runoff into drains. ‣ If contamination of drains or waterways occurs, advise emergency services.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ‣ Avoid all personal contact, including inhalation. ‣ Wear protective clothing when risk of exposure occurs. ‣ Use in a well-ventilated area. ‣ Prevent concentration in hollows and sumps. ‣ DO NOT enter confined spaces until atmosphere has been checked. ‣ Avoid smoking, naked lights or ignition sources. ‣ Avoid contact with incompatible materials. ‣ When handling, DO NOT eat, drink or smoke. ‣ Keep containers securely sealed when not in use. ‣ Avoid physical damage to containers. ‣ Always wash hands with soap and water after handling. ‣ Work clothes should be laundered separately. ‣ Use good occupational work practice. ‣ Observe manufacturer's storage and handling recommendations contained within this SDS. ‣ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
Other information	<ul style="list-style-type: none"> ‣ Store in original containers. ‣ Keep containers securely sealed. ‣ No smoking, naked lights or ignition sources. ‣ 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 storage and handling recommendations contained within this SDS. Store below 30 deg. C. <ul style="list-style-type: none"> ‣ Protect from light.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ‣ Metal can or drum ‣ Packaging as recommended by manufacturer. ‣ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<ul style="list-style-type: none"> ‣ Avoid reaction with oxidising agents ‣ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

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SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	pyrethrum	Pyrethrum	5 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
piperonyl butoxide	6.5 mg/m3	72 mg/m3	1,200 mg/m3

Ingredient	Original IDLH	Revised IDLH
2-ethylhexyl bicycloheptene dicarboximide	Not Available	Not Available
piperonyl butoxide	Not Available	Not Available
pyrethrum	5,000 mg/m3	Not Available
water	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
2-ethylhexyl bicycloheptene dicarboximide	E	≤ 0.1 ppm

Notes: Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

MATERIAL DATA

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p>										
	<table border="0" style="width: 100%;"> <tr> <td style="width: 70%;">Type of Contaminant:</td> <td style="width: 30%;">Air Speed:</td> </tr> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td> <td>0.25-0.5 m/s (50-100 f/min)</td> </tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </table>	Type of Contaminant:	Air Speed:	solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)
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<p>Within each range the appropriate value depends on:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Lower end of the range</td> <td style="width: 50%;">Upper end of the range</td> </tr> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> </table>	Lower end of the range	Upper end of the range	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity					
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▶ Eye wash unit.

Recommended material(s)

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:

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Material	CPI
BUTYL	A
NEOPRENE	A
VITON	A
NATURAL RUBBER	C
PVA	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.

Respiratory protection

Type A-P Filter of sufficient capacity, (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Pale yellow colour liquid with fragranced odour; miscible in water.		
Physical state	Liquid	Relative density (Water = 1)	0.99
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Applicable	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	>100	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	>100	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	10
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (Not Available%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
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Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	<p>May cause mild irritation, if misted.</p> <p>The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.</p>
Ingestion	<p>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.</p>
Skin Contact	<p>The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.</p>
Eye	<p>The liquid may produce eye discomfort causing transient smarting, blinking</p>
Chronic	<p>Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.</p> <p>Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.</p>

Fido's Fre-Itch Rinse Concentrate For Dogs, Cats, Puppies, Kittens And Cage Birds	<p>TOXICITY</p> <p>Not Available</p>	<p>IRRITATION</p> <p>Not Available</p>
2-ethylhexyl bicycloheptene dicarboximide	<p>TOXICITY</p> <p>dermal (rat) LD50: 470 mg/kg^[2]</p> <p>Inhalation(Rat) LC50; 1.94 mg/l4h^[1]</p> <p>Oral (Mouse) LD50; 1000 mg/kg^[2]</p>	<p>IRRITATION</p> <p>Eye: no adverse effect observed (not irritating)^[1]</p> <p>Skin: no adverse effect observed (not irritating)^[1]</p>
piperonyl butoxide	<p>TOXICITY</p> <p>dermal (rat) LD50: >2000 mg/kg^[1]</p> <p>Inhalation(Rat) LC50; >5.2 mg/l4h^[1]</p> <p>Oral (Rat) LD50; >2000 mg/kg^[1]</p>	<p>IRRITATION</p> <p>Not Available</p>
pyrethrum	<p>TOXICITY</p> <p>Dermal (rabbit) LD50: 300 mg/kg^[2]</p> <p>Oral (Rat) LD50; 200 mg/kg^[2]</p>	<p>IRRITATION</p> <p>Not Available</p>
water	<p>TOXICITY</p> <p>Oral (Rat) LD50; >90000 mg/kg^[2]</p>	<p>IRRITATION</p> <p>Not Available</p>
Legend:	<p>1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances</p>	

2-ETHYLHEXYL BICYCLOHEPTENE DICARBOXIMIDE	<p>The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.</p> <p>For 2-ethylhexyl (or N-octyl) bicycloheptene dicarboximide (MGK-264)</p> <p>Derma! Absorption: A study with human volunteers indicated that the derma! absorption factor for MGK-264 is approximately</p>
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10% based on the combination of radiolabelled material in the urine (about 1%) and unaccounted for radioactivity (about 9%, assumed to be retained in the body).

Subchronic Inhalation Toxicity: A 90-day rat inhalation toxicity study demonstrated that at the lowest dose tested, there were indications of metaplasia/hyperplasia and changes in the larynx. At higher doses, histopathology of the larynx revealed additional changes and more intense changes in the epithelium and throat. Thus, inhalation exposure is capable of causing alterations in the respiratory tract.

Immunotoxicity and Neurotoxicity: There were no indications of immunotoxicity or specific neurotoxicity

Subchronic and Chronic Oral Toxicity: The liver is the target organ of MGK-264. Liver effects were noted in the adults in the rat chronic/oncogenicity study, the mouse chronic/oncogenicity study, the rat multi-generation reproduction study and subchronic and chronic dog studies. The dog appeared to be the most sensitive species for liver alterations but these alterations were limited to slight to moderate brown pigment and circulating enzyme changes. The dog study did not include histopathology of the liver to verify the presence of degenerative conditions. In the mouse, liver changes include bile duct histological changes including liver tumors, as well as kidney weight effects and brown pigment.

Carcinogenicity: MGK-264 has been identified as a possible human carcinogen based on statistically significant increases mainly in benign liver adenomas in both sexes of mice at doses approaching the limit dose and on increases in benign thyroid follicular tumors in male rats at doses considered to be adequate to assess carcinogenic potential.

Developmental Toxicity: The rat and rabbit developmental toxicity studies did not demonstrate developmental toxicity for MGK-264. Maternal toxicity consisted of body weight and food consumption decreases. However, at higher doses, abortions, resorptions, and deaths were noted.

Reproductive Toxicity: There were no effects on the reproductive performance of either males or females in the multi-generation reproduction study. Systemic effects were related to body weight decrease as well as histopathological changes in the liver similar to those seen in the rat chronic feeding study. However, offspring for all generations indicated decreased body weight during lactation at a lower dose than parental systemic effects. The effect was reversible after weaning as pups regained weight and their weights were comparable to control animal weights after weaning.

Mutagenicity: Mutagenicity and genotoxicity were not evident in the Ames test for bacterial mutations, in the unscheduled DNA synthesis, or in a chromosome aberration studies. Although MGK-264 was considered weakly positive in the mouse lymphoma assay, there was a low concern for mutagenic or genetic toxicity.

Metabolism: The metabolism and pharmacokinetics data for MGK-264 in rats demonstrated that MGK-264 is absorbed and excreted with little retention of metabolites

PIPERONYL BUTOXIDE

Dermal (rabbit) LD50: >1880 mg/kg [Handbook of Toxicology] *Published value - probably not peer-reviewed ADI: 0.03 mg/kg
The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

PYRETHRUM

ADI: 0.04 mg/kg/day
For pyrethrins
The term "pyrethrin" refers to all six isomers found in pyrethrum, extracts which are obtained from the dried and ground flowers of the pyrethrum plant, Chrysanthemum cinerariaefolium. The CAS Registry No. for the mixture is 8003-34-7. The individual isomers are referred to by the common names of the acid followed by an Arabic number 1 or 2 (i.e., pyrethrin 1, pyrethrin 2, cinerin 1, cinerin 2, jasmolin 1, jasmolin 2). If the term pyrethrins is followed by a roman numerical designation, then it refers to all of the isomers of that number in the pyrethrum extract (e.g., pyrethrins I includes pyrethrin 1, cinerin 1, and jasmolin 1).
Pyrethrins have low to moderate acute toxicity via the oral, dermal, and inhalation routes. Mammalian toxicity data suggest that pyrethrins are slightly toxic to small mammals on an acute oral basis (LD50 = 700 mg/kg body weight).
They are a moderate eye irritant, a mild dermal irritant, and are not a skin sensitizers.

Toxic Effects
The critical toxicological effects of pyrethrins are

- neurobehavioral effects (tremors, labored breathing, hyperactivity, secretory signs, matted coats), following acute, short-term, and chronic exposure, with nervous system lesions observed in the rat and mouse following acute exposure;
- thyroid effects, following chronic exposure in the rat and dog; and
- liver effects, following short- and long-term exposure in the rat, dog, and mouse.

Following inhalation exposure, neurobehavioral effects were observed initially, and respiratory tract lesions were observed at all dose levels. The neurobehavioral effects and the mode of action on the sodium channel are considered relevant to humans because the effects are observed in both the rat and mouse, and the mode of action affects a basic function of the nervous system that is common to all animals.

Toxic Mixtures Effects: The U.S.EPA considered the possibility for increased toxicity due to the presence of synergists such as MGK-264 and piperonyl butoxide in pyrethrins formulations. In order for synergistic effects to be observed in humans, absorbed doses high enough to significantly affect the mixed function oxidase enzymes would be required. It is unlikely that these levels would occur based on the registered uses of pyrethrins.

Neurotoxicity: There is a concern for neurotoxicity resulting from exposure to pyrethrins, based on

- tremors in female rats, decreased motor activity in male rats, and neuropathology in both sexes in a rat acute neurotoxicity study;
- clinical signs (excessive salivation and head arched backward) in a female rabbit following exposure during gestation; and
- tremors in female rats in a subchronic inhalation study.

In the range-finding developmental toxicity studies in rats and rabbits, tremors/convulsions were observed in those that died during the study. In the mouse 90-day range-finding study, tremors and increased/decreased activity were observed at dose levels that also resulted in mortality. Pyrethrins are axonic poisons.

Reproductive toxicity: In the two generation rat reproduction study, parental male systemic and reproductive toxicity were detected at 1000 ppm (65 mg/kg body weight per day) and parental female systemic toxicity was detected at 3000 ppm (196 mg/kg body weight per day). The NOAEL for parental systemic (male) and reproductive toxicity was 100 ppm (6.4 mg/kg body weight-day).

Cancer: Pyrethrins are classified as "Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential," based on the weight-of-the-evidence including

- the occurrence of benign liver tumors in female rats,

Fido's Fre-Itch Rinse Concentrate For Dogs, Cats, Puppies, Kittens And Cage Birds

	<ul style="list-style-type: none"> ▸ no treatment-related increase in liver tumors in male rats, ▸ no treatment-related increase in tumors in either sex of mice, and ▸ no concern for mutagenicity. <p>Endocrine disruption: There is evidence that pyrethrins are associated with endocrine disruption. Direct measurements of serum thyroid hormones [T3, T4, and TSH], as well as histopathological alterations in the thyroid (i.e. follicular cell hypertrophy, follicular cell hyperplasia, follicular cell adenomas and/or carcinomas) indicate there is concern regarding the potential for endocrine disruption. When the appropriate screening and/or testing protocols have been developed, pyrethrins may be subject to additional screening and/or testing.</p> <p>Pyrethrins and pyrethroids: Pyrethrins are botanical insecticides that come from the pyrethrum flower, <i>Chrysanthemum cinerariaefolium</i>. Pyrethrins have limitations because of the cost of production and instability in sunlight; therefore, many synthetic pyrethrins-like compounds were developed to be more stable in sunlight and cost effective. These compounds are referred to as synthetic pyrethroids. Although all pyrethroids interact with sodium channels, there are multiple types of sodium channels and it is currently unknown whether the pyrethrins and pyrethroids have similar effects on all channels</p>
PYRETHRUM & WATER	No significant acute toxicological data identified in literature search.
Acute Toxicity	✗
Carcinogenicity	✗
Skin Irritation/Corrosion	✗
Reproductiveity	✓
Serious Eye Damage/Irritation	✓
STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗
STOT - Repeated Exposure	✗
Mutagenicity	✗
Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

Fido's Fre-Itch Rinse Concentrate For Dogs, Cats, Puppies, Kittens And Cage Birds	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
2-ethylhexyl bicycloheptene dicarboximide	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	>1.63<2.7mg/l	2
	ErC50	72h	Algae or other aquatic plants	>4.38mg/l	2
	EC50	48h	Crustacea	1.995-4.83mg/L	4
	NOEC(ECx)	96h	Crustacea	<0.077mg/l	2
LC50	96h	Fish	0.138-0.211mg/L	4	
piperonyl butoxide	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	48h	Crustacea	0.01mg/l	4
	EC50	72h	Algae or other aquatic plants	0.85mg/l	2
	EC50	48h	Crustacea	0.46-0.674mg/L	4
LC50	96h	Fish	1-3.3mg/l	4	
pyrethrum	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	504h	Crustacea	0.001mg/L	4
	EC50	48h	Crustacea	0.01-0.014mg/L	4
LC50	96h	Fish	0.003-0.004mg/L	4	
water	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Continued...

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
 Toxic to bees.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
2-ethylhexyl bicycloheptene dicarboximide	HIGH	HIGH
piperonyl butoxide	HIGH	HIGH
water	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
2-ethylhexyl bicycloheptene dicarboximide	LOW (LogKOW = 3.7)
piperonyl butoxide	HIGH (LogKOW = 4.75)

Mobility in soil

Ingredient	Mobility
2-ethylhexyl bicycloheptene dicarboximide	LOW (KOC = 10410)
piperonyl butoxide	LOW (KOC = 69.74)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Management Authority for disposal. ▸ Bury residue in an authorised landfill. ▸ Recycle containers if possible, or dispose of in an authorised landfill.
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SECTION 14 Transport information

Labels Required

Marine Pollutant	
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
2-ethylhexyl bicycloheptene dicarboximide	Not Available
piperonyl butoxide	Not Available
pyrethrum	Not Available
water	Not Available

Transport in bulk in accordance with the ICG Code

Fido's Fre-Itch Rinse Concentrate For Dogs, Cats, Puppies, Kittens And Cage Birds

Product name	Ship Type
2-ethylhexyl bicycloheptene dicarboximide	Not Available
piperonyl butoxide	Not Available
pyrethrum	Not Available
water	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

2-ethylhexyl bicycloheptene dicarboximide is found on the following regulatory lists

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australian Inventory of Industrial Chemicals (AIIC)

piperonyl butoxide is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

pyrethrum is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2

Australian Inventory of Industrial Chemicals (AIIC)

water is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (2-ethylhexyl bicycloheptene dicarboximide; piperonyl butoxide; pyrethrum; water)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (pyrethrum)
Korea - KECI	No (2-ethylhexyl bicycloheptene dicarboximide)
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	No (2-ethylhexyl bicycloheptene dicarboximide; pyrethrum)
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	No (2-ethylhexyl bicycloheptene dicarboximide)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	10/12/2021
Initial Date	07/03/2013

SDS Version Summary

Version	Date of Update	Sections Updated
6.1	07/04/2021	Ingredients

Version	Date of Update	Sections Updated
7.1	10/12/2021	Classification change due to full database hazard calculation/update.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
 PC—STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit,
 IDLH: Immediately Dangerous to Life or Health Concentrations
 ES: Exposure Standard
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index
 AIIIC: Australian Inventory of Industrial Chemicals
 DSL: Domestic Substances List
 NDSL: Non-Domestic Substances List
 IECSC: Inventory of Existing Chemical Substance in China
 EINECS: European INventory of Existing Commercial chemical Substances
 ELINCS: European List of Notified Chemical Substances
 NLP: No-Longer Polymers
 ENCS: Existing and New Chemical Substances Inventory
 KECI: Korea Existing Chemicals Inventory
 NZIoC: New Zealand Inventory of Chemicals
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 TSCA: Toxic Substances Control Act
 TCSI: Taiwan Chemical Substance Inventory
 INSQ: Inventario Nacional de Sustancias Químicas
 NCI: National Chemical Inventory
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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