SAFETY DATA SHEET

K9 Advantix® II

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06/19/2020	122000003695	Date of first issue: 19.06.2020

SECTION 1. IDENTIFICATION

Product information
Product Name : K9 Advantix® II
SDS Number : 122000003695

Use : Biocidal product

Company
Elanco Canada Ltd.
150 Research Lane
Suite 120
Guelph, ON N1G 4T2
CANADA
1-800-265-5475
elanco_sds@elanco.com

In case of emergency: CHEMTREC International: +1 703-527-3887 (24 hours)

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Acute toxicity (Inhalation)	:	Category 4
Skin irritation	:	Category 2
Eye irritation	:	Category 2A
Reproductive toxicity	:	Category 1B
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system)

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H360 May damage fertility or the unborn child.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read

and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Permethrin	52645-53-1	44,0149
1-Methyl-2-pyrrolidone	872-50-4	42,207
Imidacloprid	138261-41-3	8,803
pyriproxyfen	95737-68-1	0,44

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.

If inhaled : Not an expected entry route.

In case of skin contact : After contact with skin, wash immediately with plenty of soap and water.
If skin reactions occur, contact a physician.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

If swallowed : In case of accidental ingestion, contact your regional poison center or physician immediately.

Most important symptoms and effects, both acute and delayed : No information available.

Protection of first-aiders : No special precautions are necessary for first aid responders.

Notes to physician : No information available.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing : High volume water jet

media

Specific hazards during fire-fighting	:	Fire may cause evolution of: Carbon monoxide (CO) Carbon dioxide (CO2) Nitrogen oxides (NOx) Hydrogen cyanide (hydrocyanic acid) Hydrogen chloride gas
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Avoid formation of aerosol.
Methods and materials for containment and cleaning up	:	Cover spilled product with liquid-binding material (sand, silica gel, acid binder, universal binder, hybilat). Take up mechanically and fill into labeled, closable containers.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	No special protective measures against fire required.
Advice on safe handling	:	Avoid formation of aerosol.
Conditions for safe storage	:	Store at temperatures and conditions as indicated on the product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Permethrin	52645-53-1	SUP	10 mg/m³	
1-Methyl-2-pyrrolidone	872-50-4	TWA	400 mg/m³	CA ON OEL
		TWA	400 mg/m³	CA ON OEL
Imidacloprid	138261-41-3	Bayer OES	0,7 mg/m³	TRGS901

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
1-Methyl-2-pyrrolidone	872-50-4	5-Hydroxy-	Urine	End of	100 mg/l	ACGIH

		N-methyl-2-pyrrolidone		shift (As soon as possible after exposure ceases)		BEI
		5-Hydroxy-N-methyl-2-pyrrolidone	Urine	End of shift (As soon as possible after exposure ceases)	100 mg/l	ACGIH BEI

Personal protective equipment

Respiratory protection : Recommended Filter type:
Organic vapor with prefilter

None required for consumer use of this product.

Hand protection
Material : Chemically resistant gloves.

Remarks : None required for consumer use of this product.

Eye protection : Safety glasses
None required for consumer use of this product.

Protective measures : No special safety precautions are required during handling of pharmaceuticals in their intended finished form (tablets or liquid formulations) by chemists, the hospital's medical staff or patients.
Please consult label for end-user requirements.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : tan

Odour : very faint

Odour Threshold : No data available

pH : 3,0 - 5,5
Concentration: 100 g/l

Melting point / range : No data available

Boiling point/boiling range : 195 °C
Method: DIN 53171

Flash point : > 93,3 °C

Evaporation rate	:	No data available
Burning rate	:	No data available
Self-ignition	:	No data available
Burning number	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1,1360 g/cm³ (20 °C) Method: DIN 51757
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Impact sensitivity	:	No data available
Minimum ignition energy	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No data available
Chemical stability	:	No data available
Possibility of hazardous reactions	:	No data available
Conditions to avoid	:	No data available
Incompatible materials	:	Peroxides Bases Strong acids
Hazardous decomposition products	:	Carbon monoxide (CO) Carbon dioxide (CO2)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, female): > 2.000 mg/kg Method: OECD 425
Acute inhalation toxicity	:	LC50 (Rat): > 2,86 mg/l Exposure time: 4 h Test atmosphere: dust/mist/aerosol Method: OECD 403
Acute dermal toxicity	:	LD50 (Rat): > 5.000 mg/kg Method: OECD 402 Assessment: No adverse effect has been observed in acute toxicity tests.

Components:

Permethrin:

Acute oral toxicity	:	LD50 (Rat): 430 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 2,3 mg/l Exposure time: 4 h Test atmosphere: dust/mist/aerosol
Acute dermal toxicity	:	LD50 (Rat): > 2.500 mg/kg

1-Methyl-2-pyrrolidone:

Acute oral toxicity	:	LD50 (Rat): 4.150 mg/kg Method: OECD 401
Acute inhalation toxicity	:	LC50 (Rat): > 5,1 mg/l Exposure time: 4 h Test atmosphere: dust/mist/aerosol

Method: OECD 403
Assessment: No adverse effect has been observed in acute toxicity tests.

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD 402
Assessment: No adverse effect has been observed in acute toxicity tests.

Imidacloprid:

Acute oral toxicity : LD50 (Rat): 424 mg/kg
Method: OECD 401

Acute inhalation toxicity : LC50 (Rat): > 5,323 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist/aerosol
Method: OECD 403

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg

pyriproxyfen:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Assessment: No adverse effect has been observed in acute toxicity tests.

Skin corrosion/irritation

Product:

Species : Rabbit
Method : OECD 404
Result : Moderate skin irritation

Components:

Permethrin:

Species : Rabbit
Result : No skin irritation

1-Methyl-2-pyrrolidone:

Species : Rabbit
Result : Skin irritation

Imidacloprid:

Species : Rabbit
Result : No skin irritation

pyriproxyfen:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Product:

Species	:	Rabbit
Result	:	Moderate eye irritation
Method	:	OECD 405

Components:

1-Methyl-2-pyrrolidone:

Species	:	Rabbit
Result	:	Irritating to eyes.

Imidacloprid:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitisation

Product:

Test Type	:	Skin sensitisation
Species	:	Guinea pig
Method	:	Buehler Test
Result	:	Does not cause skin sensitisation.

Components:

Permethrin:

Result	:	May cause sensitisation by skin contact.

1-Methyl-2-pyrrolidone:

Test Type	:	Skin sensitisation
Species	:	Mouse
Method	:	OECD 429
Result	:	Does not cause skin sensitisation.
Test substance	:	Data on a comparable substance

Test Type	:	Skin sensitisation
Species	:	Human experience
Method	:	Patch Test
Result	:	Does not cause skin sensitisation.

Imidacloprid:

Test Type	:	Skin sensitisation
Species	:	Guinea pig
Method	:	Magnusson and Kligmann maximization test
Result	:	Did not cause sensitisation on laboratory animals.

pyriproxyfen:

Method	:	Magnusson and Kligmann maximization test

Result : Does not cause skin sensitisation.

Germ cell mutagenicity

Components:

1-Methyl-2-pyrrolidone:

Genotoxicity in vitro : Test Type: Bacterial mutagenicity
Result: No indication of mutagenic effects.

Genotoxicity in vivo : Remarks: In vivo tests did not show mutagenic effects

Imidacloprid:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Remarks: In vitro tests did not show mutagenic effects

Genotoxicity in vivo : Result: No indication of mutagenic effects., No evidence of a genotoxic effect.

pyriproxyfen:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Test Type: V79-HPRT Forward Mutation Assay
Result: negative

Test Type: In vitro Cytogenetic Test
Result: negative

Test Type: DNA damage and/or repair
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Result: No evidence of a genotoxic effect.

Carcinogenicity

Components:

1-Methyl-2-pyrrolidone:

Result : Animal testing did not show any carcinogenic effects.

Imidacloprid:

Result : Animal testing did not show any carcinogenic effects.

pyriproxyfen:

Species : Rat
Result : negative

Reproductive toxicity

Components:

1-Methyl-2-pyrrolidone:

Effects on fertility	:	Species: Rat Application Route: Oral General Toxicity - Parent: LOAEL: 500 mg/kg body weight Fertility: NOAEL: 350 mg/kg body weight Method: OECD 416 Result: Animal studies have produced evidence a fertility-reducing effect.
Effects on foetal development	:	Species: Rat Application Route: Oral Frequency of Treatment: 1 daily Developmental Toxicity: NOAEL: 160 mg/kg body weight Method: OECD 416 Result: May damage the unborn child.

Imidacloprid:

STOT - single exposure

Components:

1-Methyl-2-pyrrolidone:

Assessment	:	May cause respiratory irritation.

STOT - repeated exposure

Components:

Imidacloprid:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Further information

Components:

Permethrin:

Pharmaceutic effects		
Remarks	:	Insecticide
Remarks	:	Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

1-Methyl-2-pyrrolidone:

Remarks	:	Dermal absorption possible

Imidacloprid:

Pharmaceutic effects
Remarks : Insecticide

pyriproxyfen:

Pharmaceutic effects
Remarks : Insecticide

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Permethrin:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,00017 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50: 0,5 mg/l
Exposure time: 72 h

1-Methyl-2-pyrrolidone:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 500 mg/l
Exposure time: 96 h
Test Type: Acute Fish toxicity

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 1.000 mg/l
Exposure time: 24 h
Method: DIN 38412

NOEC (Daphnia magna (Water flea)): 1.000 mg/l
Exposure time: 24 h
Method: DIN 38412

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l
Exposure time: 72 h

Toxicity to microorganisms : EC20: > 600 mg/l
Exposure time: 0,5 h
Method: OECD 209

Imidacloprid:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 237 mg/l
Exposure time: 96 h
Test Type: Acute Fish toxicity

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 85 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l

Exposure time: 72 h

EC50 (Desmodesmus subspicatus (green algae)): > 10 mg/l
Exposure time: 72 h

Toxicity to microorganisms : EC50 (Activated sludge micro-organism): > 10.000 mg/l
Method: OECD 209

pyriproxyfen:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,33 - 0,37 mg/l
Exposure time: 96 h
Test Type: Acute Fish toxicity

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,4 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : IC50 (Pseudokirchneriella subcapitata (green algae)): 0,064 mg/l
Exposure time: 72 h

Persistence and degradability

Components:

Permethrin:

Biodegradability : Result: Not rapidly biodegradable
Biodegradation: 0 %
Testing period: 7 d
Exposure time: 28 d
Kinetic:
7 d: 0 %
14 d: 0 %
21 d: 0 %
28 d: 0 %

1-Methyl-2-pyrrolidone:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 90 %
Method: OECD 301E

Biochemical Oxygen Demand (BOD) : 2 mg/g
Incubation time: 5 d

Chemical Oxygen Demand (COD) : 1.600 mg/l

ThOD : 1.939 mg/g

Imidacloprid:

Stability in water : Degradation half life: > 1 a (25 °C) pH: 4
Hydrolysis: at25 °C

Degradation half life: > 1 a (25 °C) pH: 7
Hydrolysis: at25 °C

Degradation half life: ca. 1 h (25 °C) pH: 9
Hydrolysis: at25 °C

pyriproxyfen:

Biodegradability : Result: Not rapidly biodegradable
Method: OECD 301 D

Bioaccumulative potential

Components:

Permethrin:

Partition coefficient: n-octanol/water : log Pow: 5,95

1-Methyl-2-pyrrolidone:

Partition coefficient: n-octanol/water : log Pow: -0,46

Imidacloprid:

Bioaccumulation : Remarks: Low potential for bioaccumulation

Partition coefficient: n-octanol/water : log Pow: 0,57 (21 °C)
Method: OECD 107

pyriproxyfen:

Bioaccumulation : Bioconcentration factor (BCF): 1.500

Partition coefficient: n-octanol/water : log Pow: 5,37 (25 °C)

Mobility in soil

No data available

Other adverse effects

Components:

Imidacloprid:

Adsorbed organic bound halogens (AOX) : Remarks: The product contains organic halogens.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic.

However, under MOE, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PERMETHRIN, IMIDACLOPRID, N-METHYLPYRROLIDONE)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PERMETHRIN, IMIDACLOPRID, N-METHYLPYRROLIDONE)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

TDG

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

NPRI Components	:	1-Methyl-2-pyrrolidone 2,6-Di-tert-butyl-p-cresol

International Regulations

Montreal Protocol (Ozone Depleting Substances) : Not applicable

Rotterdam Convention (Prior Informed Consent) : Not applicable

Stockholm Convention (Persistent Organic Pollutants) : Not applicable

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
TRGS901	:	TRGS 901, Explanations and Basis for Exposure Limits in the Workplace Air
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
TRGS901 / Bayer OES	:	BOES = Bayer Occupational Exposure Standard

Revision Date : 06/19/2020

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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