SAFETY DATA SHEET

FYFANON® 440 EW

Version	Revision Date:	SDS Number:	Date of last issue: 22.03.2021
1.1	27.11.2024	50001286	Date of first issue: 22.03.2021

Section 1: Identification

Product name : FYFANON® 440 EW

Recommended use of the chemical and restrictions on use

Recommended use : Can be used as insecticide only.

Restrictions on use : Use as recommended by the label.

Manufacturer or supplier's details

Company : FMC New Zealand Ltd

Address : Level 5, 3 Te Kehu Way, Mount Wellington
1060 Auckland
New Zealand

Telephone : +640800658080

Telefax : (09)-271-2961

E-mail address : SDS-Info@fmc.com

Emergency telephone number : For leak, fire, spill or accident emergencies, call:
0800 734 607 (Ixom)

Medical emergency:
0800 764 766 (NZ Poisons Information Centre)
0800 111174 (24 hour Medical Emergency)
0800 387668 (Transport Emergency)

Section 2: Hazard identification

GHS Classification

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 2

Skin sensitisation : Category 1

Reproductive toxicity : Category 2

Specific target organ toxicity - repeated exposure : Category 1

Hazardous to the aquatic environment - acute hazard	:	Category 1
Hazardous to the aquatic environment - chronic hazard	:	Category 1
Hazardous to the environment	:	Hazardous to soil organisms
Hazardous to the environment	:	Hazardous to terrestrial vertebrates
Hazardous to the environment	:	Hazardous to terrestrial invertebrates

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.
H423 Harmful to the soil environment.
H433 Harmful to terrestrial vertebrates.
H443 Harmful to terrestrial invertebrates.

Precautionary statements : P103 Read carefully and follow all instructions.

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/

attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

Section 3: Composition/information on ingredients

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
malathion (ISO) [containing ≤ 0,03 % isomalathion]	121-75-5	>= 30 -< 50
Tristyryl phenol-polyethylene glycol-phosphoric acid ester	114535-82-9	>= 2.5 -< 10
Polyacrylic acid	9003-01-4	>= 0.25 -< 1

Section 4: First-aid measures

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Remove to fresh air.
If unconscious, place in recovery position and seek medical advice.
If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

In case of skin contact : If on clothes, remove clothes.
If on skin, rinse well with water.
Wash off with soap and plenty of water.
Wash contaminated clothing before re-use.
Get medical attention immediately if irritation develops and persists.

In case of eye contact	:	Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Do not induce vomiting without medical advice.
Most important symptoms and effects, both acute and delayed	:	Skin contact may result in itching and redness. Eye contact may result in itching, watery eyes, light sensitivity, pain, and/or blurred vision. Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye irritation. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.
Protection of first-aiders	:	Avoid inhalation, ingestion and contact with skin and eyes.
Notes to physician	:	Treat symptomatically. Immediate medical attention is required in case of ingestion.

Section 5: Fire-fighting measures

Suitable extinguishing media	:	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	:	High volume water jet Do not spread spilled material with high-pressure water streams.
Specific hazards during fire-fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Fire may produce irritating, corrosive and/or toxic gases. Oxides of phosphorus Carbon oxides Sulphur oxides
Specific extinguishing methods	:	Remove undamaged containers from fire area if it is safe to do so. Use a water spray to cool fully closed containers. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters	:	Firefighters should wear protective clothing and self-contained breathing apparatus.
Hazchem Code	:	3Z

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. If it can be safely done, stop the leak. Do not touch or walk through the spilled material. Never return spills in original containers for re-use. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Never return spills in original containers for re-use. Collect as much of the spill as possible with a suitable absorbent material. Pick up and transfer to properly labelled containers. Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

Section 7: Handling and storage

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. Do not inhale aerosol. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and

kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions : The product should never be heated above 55°C. Local heating above this temperature should be avoided as well.
Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading “POISON” is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

Materials to avoid : Do not store near acids.

Recommended storage temperature : < 25 °C

Further information on storage stability : No decomposition if stored and applied as directed.

Section 8: Exposure controls/personal protection

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
malathion (ISO) [containing ≤ 0,03 % isomalathion]	121-75-5	WES-TWA (Inhalable Fraction and Vapour)	1 mg/m3	NZ OEL
		Further information: Skin sensitiser, Skin absorption		
		TWA (Inhalable fraction and vapor)	1 mg/m3	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
malathion (ISO) [containing ≤ 0,03 % isomalathion]	121-75-5	Cholinesterase activity	Blood		60 % of baseline	NZ BEI
		Cholinesterase activity	Blood		80 % of baseline	NZ BEI
		Cholinesterase activity	Blood		75 % of baseline	NZ BEI

Personal protective equipment

Respiratory protection	:	In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Hand protection		
Material	:	Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Protective measures	:	Plan first aid action before beginning work with this product. Always have on hand a first-aid kit, together with proper instructions. When using do not eat, drink or smoke. In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

Section 9: Physical and chemical properties

Appearance	:	suspension
Colour	:	off-white
Odour	:	glue-like
Odour Threshold	:	No data available
pH	:	4.22 (20 °C) Concentration: 1 % The pH is expected to decrease on prolonged storage.
Melting point/freezing point	:	< 0 °C
Boiling point/boiling range	:	No data available
Flash point	:	> 95 °C Method: Directive 67/548/EEC, Annex V, A.9.

Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	Not available for this mixture.
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.1 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	emulsifiable
Partition coefficient: n-octanol/water	:	Not available for this mixture.
Auto-ignition temperature	:	> 400 °C Method: Regulation (EC) No. 440/2008, Annex, A.15
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	16.43 - 186.7 mPa.s (25 °C) Method: OECD Test Guideline 114
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
Surface tension	:	39.2 mN/m, 22 °C
Molecular weight	:	Not applicable
Particle size	:	Not applicable

Section 10: Stability and reactivity

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed. Decomposes on heating.

Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	Avoid extreme temperatures Heat, flames and sparks. Exposure to sunlight. Avoid formation of aerosol. Heating of the product will produce harmful and irritant vapours.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers
Hazardous decomposition products	:	Oxides of phosphorus Carbon oxides Sulphur oxides

Section 11: Toxicological information

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: US EPA Test Guideline OPP 81-1 Assessment: The substance or mixture has no acute oral toxicity Assessment: The component/mixture is moderately toxic after single ingestion.
Acute inhalation toxicity	:	LC50 (Rat): > 7.74 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat): > 5,000 mg/kg Method: EPA OPP 81-2 Assessment: The substance or mixture has no acute dermal toxicity

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Acute oral toxicity	:	LD50 (Rat): 1,857 mg/kg Method: OECD Test Guideline 401 LD50 (Rat, female): 1,608 - 2,550 mg/kg Method: OECD Test Guideline 401 Symptoms: Tremors, hypoactivity

GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: EPA OPP 81 - 3
GLP: yes
Remarks: no mortality

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: US EPA Test Guideline OPP 81-2
GLP: yes
Assessment: The component/mixture is minimally toxic after single contact with skin.

LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The component/mixture is minimally toxic after single contact with skin.

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Polyacrylic acid:

Acute oral toxicity : LD50 (Rat, male and female): 617 - 1,405 mg/kg

Acute inhalation toxicity : LC0 (Rat, male and female): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

Species : Rabbit
Method : US EPA Test Guideline OPP 81-5
Result : No skin irritation

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Species	:	Rabbit
Method	:	US EPA Test Guideline OPP 81-5
Result	:	No skin irritation
GLP	:	yes

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Polyacrylic acid:

Species	:	Rabbit
Exposure time	:	4 h
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	US EPA Test Guideline OPP 81-4
Remarks	:	Minimal effects that do not meet the threshold for classification.
Result	:	Eye irritation

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	EPA OPP 81-4
GLP	:	yes

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Species	:	Rabbit
Result	:	Eye irritation
Method	:	OECD Test Guideline 405

Polyacrylic acid:

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Remarks	:	Based on data from similar materials

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Product:

Test Type	:	Buehler Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	US EPA Test Guideline OPP 81-6
Result	:	Not a skin sensitizer.
Result	:	May cause sensitisation by skin contact.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Exposure routes	:	Dermal
Species	:	Guinea pig
Method	:	US EPA Test Guideline OPP 81-6
Result	:	Does not cause skin sensitisation.
GLP	:	yes
Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Dermal
Species	:	mice
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitisation.
GLP	:	yes
Test Type	:	Maximisation Test
Exposure routes	:	Dermal
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	May cause sensitisation by skin contact.

Polyacrylic acid:

Test Type	:	Split adjuvant test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Result	:	Not a skin sensitizer.

Chronic toxicity

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

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

Test Type: In vitro mammalian cell gene mutation test
Result: positive
Remarks: Based on data from similar materials

Test Type: unscheduled DNA synthesis assay
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: chromosome aberration assay
Species: Rat
Result: negative
Remarks: Based on data from similar materials

Test Type: unscheduled DNA synthesis assay
Species: Rat
Result: negative
Remarks: Based on data from similar materials

Polyacrylic acid:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: Chinese hamster ovary cells
Method: OECD Test Guideline 476
Result: negative
Remarks: Based on data from similar materials

Test Type: gene mutation test
Test system: mouse lymphoma cells
Result: positive
Remarks: Based on data from similar materials

Test Type: reverse mutation assay
Result: negative
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Method: OECD Test Guideline 473
Result: positive
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration
Species: Rat (male and female)
Application Route: Oral
Method: OECD Test Guideline 475
Result: negative
Remarks: Based on data from similar materials

Test Type: Rodent Dominant Lethal Assay
Species: Mouse (male and female)
Application Route: Oral

Result: negative
Remarks: Based on data from similar materials

Carcinogenicity

Based on available data, the classification criteria are not met.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Species	:	Rat
Application Route	:	Ingestion
Exposure time	:	24 month(s)
NOAEL	:	6,000 ppm
Result	:	positive
Carcinogenicity - Assessment	:	Occurrence of tumors has been observed at excessive exposure levels. This can be considered as not relevant for possible carcinogenicity to humans during normal use.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Product:

Reproductive toxicity - Assessment	:	Suspected of damaging fertility or the unborn child.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female General Toxicity F1: NOAEL: 132 - 152 mg/kg bw/day Symptoms: Reduced offspring weight gain
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat General Toxicity Maternal: NOAEL: 400 mg/kg bw/day Teratogenicity: NOAEL: 800 mg/kg bw/day Result: No teratogenic effects Test Type: Embryo-foetal development Species: Rabbit General Toxicity Maternal: NOAEL: 25 mg/kg bw/day Teratogenicity: NOAEL: 25 mg/kg bw/day Result: No teratogenic effects
Reproductive toxicity - Assessment	:	Animal testing showed no reproductive toxicity.

Polyacrylic acid:

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female

Application Route: Oral
Dose: 0, 53, 240, 460 mg/kg bw/day
General Toxicity - Parent: NOAEL: 240 mg/kg body weight
General Toxicity F1: NOAEL: 53 mg/kg body weight
General Toxicity F2: NOAEL: 53 mg/kg body weight
Method: OECD Test Guideline 416
Result: negative
Remarks: Based on data from similar materials

Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
Dose: 0, 53, 240, 460 mg/kg bw/day
General Toxicity - Parent: LOAEL: 460 mg/kg body weight
General Toxicity F1: LOAEL: 240 mg/kg body weight
General Toxicity F2: LOAEL: 240 mg/kg body weight
Method: OECD Test Guideline 416
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Species: Rat
Application Route: inhalation (vapour)
Dose: 0.117, 0.353, 1.06 milligram per liter
Duration of Single Treatment: 14 d
General Toxicity Maternal: NOAEC: 0.12 mg/L
Teratogenicity: NOAEC F1: > 1.08 mg/L
Embryo-foetal toxicity: NOAEC F1: > 1.08 mg/L
Method: OECD Test Guideline 414
Remarks: Based on data from similar materials

Species: Rat
Application Route: inhalation (vapour)
Dose: 0.117, 0.353, 1.06 milligram per liter
Duration of Single Treatment: 14 d
General Toxicity Maternal: LOAEC: 0.36 mg/L
Method: OECD Test Guideline 414
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT - single exposure

Based on available data, the classification criteria are not met.

Components:

Polyacrylic acid:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Product:

Assessment : Causes damage to organs through prolonged or repeated exposure.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Polyacrylic acid:

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

Repeated dose toxicity

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Species	:	Rat
LOAEL	:	34.4 mg/kg
Application Route	:	Oral - feed
Exposure time	:	90 d
Target Organs	:	Nervous system
Symptoms	:	cholinesterase inhibition

Polyacrylic acid:

Species	:	Rat, male
NOAEL	:	40 mg/kg
LOAEL	:	100 mg/kg
Application Route	:	Oral
Exposure time	:	12 months
Dose	:	6, 40, 100, 200 mg/kg bw/day
Method	:	OECD Test Guideline 452
Remarks	:	Based on data from similar materials

Species	:	Rat, female
NOAEL	:	375 mg/kg
Application Route	:	Oral
Exposure time	:	12 months
Dose	:	10, 66, 150, 375 mg/kg bw/day
Method	:	OECD Test Guideline 452
Remarks	:	Based on data from similar materials

Aspiration toxicity

Based on available data, the classification criteria are not met.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

The substance does not have properties associated with aspiration hazard potential.

Further information

Product:

Remarks : On exposure to larger quantities of aged product symptoms of poisoning (cholinesterase inhibition) may occur. The symptoms of cholinesterase inhibition are: headache, nausea, vomiting, cramps, weakness, blurred vision, pin-point pupils, tightness in chest, laboured breathing, nervousness, sweating, watering of eyes, drooling or frothing of mouth and nose, muscle spasms and coma.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Remarks : The active ingredient malathion is a cholinesterase inhibitor of low mammalian toxicity. However, prolonged storage or storage at too high temperatures may induce formation of the much more toxic and synergistic contaminant isomalathion (LD50, oral, rat, 89 mg/kg). Both malathion and isomalathion rapidly enter the body on contact with all skin surfaces and eyes.
Repeated exposures to cholinesterase inhibitors such as malathion or isomalathion may, without warning, cause increased susceptibility to doses of any cholinesterase inhibitor.

Section 12: Ecological information

Ecotoxicity

Product:

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): 285 mg/kg
Exposure time: 14 d

Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): 528 mg/kg

Ecotoxicology Assessment

Toxicity Data on Soil : Harmful to the soil environment.

Other organisms relevant to the environment : Harmful to terrestrial vertebrates., Harmful to terrestrial invertebrates.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.18 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.72 µg/l

aquatic invertebrates		Exposure time: 48 h
Toxicity to algae/aquatic plants	:	IC50 (Selenastrum capricornutum (green algae)): 4.06 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1,000
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0.021 mg/l Exposure time: 37 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.00006 mg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	1,000
Toxicity to soil dwelling organisms	:	(Eisenia fetida (earthworms)): 613 mg/kg Exposure time: 14 d
Toxicity to terrestrial organisms	:	LD50 (Colinus virginianus (Bobwhite quail)): 359 mg/kg Exposure time: 5 d
		LC50 (Colinus virginianus (Bobwhite quail)): 3,497 mg/kg Exposure time: 5 d Remarks: Dietary
		LD50 (Anas platyrhynchos (Mallard duck)): > 2,250 mg/kg
		LD50 (Apis mellifera (bees)): 0.38 µg/bee End point: Acute oral toxicity

Ecotoxicology Assessment

Toxicity Data on Soil	:	Harmful to the soil environment.
Other organisms relevant to the environment	:	Harmful to terrestrial vertebrates., Harmful to terrestrial invertebrates.

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): 100 - 500 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	NOEC (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
		EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h

Method: OECD Test Guideline 201

Polyacrylic acid:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 27 mg/l
Exposure time: 96 h
Test Type: semi-static test
Remarks: Based on data from similar materials

LC50 (Oryzias latipes (Orange-red killifish)): 62 mg/l
Exposure time: 96 h
Test Type: semi-static test
Remarks: Based on data from similar materials

LC50 (Cyprinodon variegatus (sheepshead minnow)): 236 mg/l
Exposure time: 96 h
Test Type: semi-static test
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 47 mg/l
Exposure time: 48 h
Test Type: semi-static test

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.75 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.03 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

EC50 (Skeletonema costatum (marine diatom)): 105 mg/l
Exposure time: 72 h
Test Type: static test
Method: ISO 10253

NOEC (Skeletonema costatum (marine diatom)): 36 mg/l
Exposure time: 72 h
Test Type: static test
Method: ISO 10253

EC50 (Desmodesmus subspicatus (green algae)): 0.13 - 0.205 mg/l
Exposure time: 72 h
Method: EU Method C3

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : NOEC (Pseudomonas putida): 41 mg/l
Exposure time: 16 h

Test Type: Cell multiplication inhibition test

Persistence and degradability

Product:

Biodegradability : Remarks: Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Biodegradability : Result: Not readily biodegradable.

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 30 - 40 %
Method: OECD Test Guideline 302B

Polyacrylic acid:

Biodegradability : aerobic
Inoculum: activated sludge, non-adapted
Result: Readily biodegradable.
Exposure time: 28 d
Method: OECD Test Guideline 301F

Bioaccumulative potential

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 95
Remarks: Bioaccumulation is unlikely.
See section 9 for octanol-water partition coefficient.

Partition coefficient: n-octanol/water : log Pow: 2.75

Polyacrylic acid:

Partition coefficient: n-octanol/water : log Pow: 0.27 (20 °C)
pH: 3.59 - 3.63
Remarks: Based on data from similar materials

log Pow: 0.23 (20 °C)
pH: 3.59 - 3.63
Remarks: Based on data from similar materials

Mobility in soil

Components:

malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Distribution among environmental compartments	:	Remarks: medium mobility in soil

Other adverse effects

Product:

Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Section 13: Disposal considerations

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

Section 14: Transport information

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Malathion)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Malathion)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo	:	964

aircraft)		
Packing instruction (passenger aircraft)	:	964
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Malathion)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes
Remarks	:	Environmentally hazardous substances/Marine Pollutants in single or combination packaging containing a net quantity per single or inner packaging of 5 kg or less for solids, or having a net quantity per single or inner packaging of 5 L or less for liquids may be transported as non-dangerous goods as provided in special provision A197 of the IATA and section 2.10.2.7 of IMDG code.

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

Not applicable for product as supplied.

National Regulations

NZS 5433

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Malathion)
Class	:	9
Packing group	:	III
Labels	:	9
Hazchem Code	:	3Z
Marine pollutant	:	yes

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

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

HSNO Approval Number

HSR100380

Tolerable Exposure Limits (TEL)

Not applicable

Environmental Exposure Limits (EEL)
Not applicable

The components of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
TECI	:	Not in compliance with the inventory

Section 16: Other information

Revision Date	:	27.11.2024
Date format	:	dd.mm.yyyy

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NZ BEI	:	New Zealand. Biological Exposure Indices
NZ OEL	:	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NZ OEL / WES-TWA	:	Workplace Exposure Standard - Time Weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA

- International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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