SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

FYFANON® 440 G/L EW

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	29.07.2024	50001286	Date of first issue: 29.07.2024

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

1.1 Product identifier

Product name FYFANON® 440 G/L EW

Other means of identification

Product code 50001286

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

Use of the Substance/Mixture : Can be used as insecticide only.

Recommended restrictions on use : Use as recommended by the label.

1.3 Details of the supplier of the safety data sheet

Supplier Address

FMC Agricultural Solutions A/S
Thyborønvej 78
DK-7673 Harboøre
Denmark

Telephone: +45 9690 9690
Telefax: +45 9690 9691
E-mail address: SDS-Info@fmc.com .

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:
Denmark: +45-69918573 (CHEMTREC)

Medical emergency:
Denmark: +45 82 12 12 12

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Cat-	H410: Very toxic to aquatic life with long lasting

egory 1 effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P273 Avoid release to the environment.

Response:

P391 Collect spillage.

Disposal:

P501 Dispose of contents/container as hazardous waste in accordance with local regulations.

Additional Labelling

EUH208 Contains malathion (ISO) [containing ≤ 0,03 % isomalathion]. May produce an allergic reaction.

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

For special phrases (SP) and safety intervals, consult the label.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Mixture

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
malathion (ISO) [containing ≤ 0,03 % isomalathion]	121-75-5 204-497-7 015-041-00-X	Acute Tox. 4; H302 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1.000 M-Factor (Chronic aquatic toxicity): 1.000 Acute toxicity estimate Acute oral toxicity: 1.608 mg/kg	>= 30 - < 50
Tristyryl phenol-polyethylene glycol-phosphoric acid ester	114535-82-9	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	>= 2,5 - < 10
Polyacrylic acid	9003-01-4	Acute Tox. 4; H302 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) Aquatic Acute 1; H400 Aquatic Chronic 2; H411 M-Factor (Acute aquatic toxicity): 1 Acute toxicity estimate Acute oral toxicity: 617 mg/kg	>= 0,25 - < 1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of 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.

Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.

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.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems producing respiratory depression.

Skin contact may result in itching and redness. Eye contact may result in itching, watery eyes, light sensitivity, pain, and/or blurred vision.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Decontamination procedures such as whole body washing, gastric lavage and administration of activated charcoal are

often required.
Antidote: If symptoms if cholinesterase inhibition (see section 11) are present, administer atropine sulphate, which often is a lifesaving antidote, in large doses, TWO to FOUR mg intravenously or intramuscularly as soon as possible. Repeat at 5 to 10 minute intervals until signs of atropinisation appear and maintain full atropinisation until all organophosphate is metabolised.
Obidoxime chloride (Toxogonin), alternatively pralidoxime chloride(2-PAM), may be administered as an adjunct to, but not a substitute for atropine sulphate. Treatment with oxime should be maintained as long as atropine sulphate is administered.
At first sign of pulmonary oedema the patient should be given supplementary oxygen and treated symptomatically.
Relapse can occur after initial improvement. VERY CLOSE SUPERVISION OF THE PATIENT IS INDICATED FOR AT LEAST 48 HOURS, DEPENDING ON THE SEVERITY OF POISONING.
Much information on (acetyl)cholinesterase inhibition and its treatment can be found on the internet.
Treat symptomatically.
Immediate medical attention is required in case of ingestion.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	:	Do not spread spilled material with high-pressure water streams.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	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

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Firefighters should wear protective clothing and self-contained breathing apparatus. Wear self-contained breathing apparatus for firefighting if necessary.
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.

Further information	:	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. 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	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.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for 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.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	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.
Advice on common storage	:	Do not store near acids.
Recommended storage temperature	:	< 25 °C
Further information on storage stability	:	No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s)	:	Registered pesticide to be used in accordance with a label approved by country-specific regulatory authorities.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
malathion (ISO) [containing ≤ 0,03 % isomalathion]	121-75-5	GV	5 mg/m3	DK OEL
	Further information: Means that the substance can be absorbed through the skin.			
		S	10 mg/m3	DK OEL
	Further information: Means that the substance can be absorbed through the skin.			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Polyacrylic acid	Consumers	Inhalation	Long-term systemic effects	0,348 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,2 mg/kg
	Consumers	Oral	Long-term systemic effects	0,2 mg/kg
	Workers	Inhalation	Long-term systemic effects	1,97 mg/m3
	Workers	Dermal	Long-term systemic effects	0,560 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
malathion (ISO) [containing ≤ 0,03 % isomalathion]	Fresh water	1,2
Polyacrylic acid	Fresh water	0,003 mg/l
	Intermittent use (freshwater)	0,0013 mg/l
	Marine water	0,0003 mg/l
	Intermittent use (marine water)	0,00013 mg/l
	Sewage treatment plant	0,9 mg/l
	Fresh water sediment	0,0207 mg/kg dry weight (d.w.)
	Marine sediment	0,00207 mg/kg dry weight (d.w.)
	Soil	0,003117 mg/kg dry weight (d.w.)

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles

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.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

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

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Form	:	suspension
Colour	:	off-white
Odour	:	glue-like
Odour Threshold	:	No data available
Melting point/freezing point	:	< 0 °C
Boiling point/boiling range	:	No data available
Flammability	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available

Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	> 95 °C Method: Directive 67/548/EEC, Annex V, A.9.
Auto-ignition temperature	:	> 400 °C Method: Regulation (EC) No. 440/2008, Annex, A.15
Decomposition temperature	:	No data available
pH	:	4,22 (20 °C) Concentration: 1 % The pH is expected to decrease on prolonged storage.
Viscosity		
Viscosity, dynamic	:	16,43 - 186,7 mPa,s (25 °C) Method: OECD Test Guideline 114
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	emulsifiable
Partition coefficient: n-octanol/water	:	Not available for this mixture.
Vapour pressure	:	Not available for this mixture.
Relative density	:	No data available
Density	:	1,1 g/cm3 (20 °C)
Relative vapour density	:	No data available
Particle characteristics		
Particle size	:	Not applicable

9.2 Other information

Explosives	:	Not explosive

Oxidizing properties	:	Non-oxidizing
Evaporation rate	:	No data available
Surface tension	:	39,2 mN/m, 22 °C
Molecular weight	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.
Malathion will decompose rapidly when heated to temperatures above 100°C, significantly increasing the risk of explosion. Direct local heating such as electric heating or by steam must be avoided.
The decomposition is dependent on time as well as temperature due to self-accelerating exothermic and autocatalytic reactions. The reactions involve rearrangements and polymerisation releasing volatile malodorous and inflammable compounds such as dimethyl sulphide and methyl mercaptan.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

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.

10.5 Incompatible materials

Materials to avoid : Strong alkalis, amines and strong oxidising compounds. The product can corrode metals (but does not meet the criteria for classification).

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

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

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

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

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

Product:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation
Remarks	:	Minimal effects that do not meet the threshold for classification.

Components:

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

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

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

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

Polyacrylic acid:

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

Respiratory or skin sensitisation

Skin sensitisation

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

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.

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.

Test Type	:	Local lymph node assay (LLNA)
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitisation.

Test Type	:	Magnussen-Kligman test
Method	:	OECD Test Guideline 406
Result	:	May cause sensitisation by skin contact.
Remarks	:	Based on data from similar materials

Polyacrylic acid:

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

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
Remarks	:	Probably carcinogenic to humans (IARC 2A)

Reproductive toxicity

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

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

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

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

Components:

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.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Neurological effects

Components:

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

Remarks : Neurotoxity observed in animals studies

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

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Salmo gairdneri): 0,74 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,0044 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to soil dwelling organisms	:	LC50: 285 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	:	LD50: 528 mg/kg Species: Colinus virginianus (Bobwhite quail)

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

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 aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,72 µg/l 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: 0,021 mg/l Exposure time: 37 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,00006 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	1.000
Toxicity to soil dwelling or-	:	613 mg/kg

ganisms		Exposure time: 14 d Species: Eisenia fetida (earthworms) Remarks: No significant adverse effect on nitrogen mineralization. No significant adverse effect on carbon mineralization.
Toxicity to terrestrial organisms	:	LD50: 359 mg/kg Exposure time: 5 d Species: Colinus virginianus (Bobwhite quail) LC50: 3.497 mg/kg Exposure time: 5 d Species: Colinus virginianus (Bobwhite quail) Remarks: Dietary LD50: > 2.250 mg/kg Species: Anas platyrhynchos (Mallard duck) LD50: 0.38 µg/bee End point: Acute oral toxicity Species: Apis mellifera (bees)

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

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

12.3 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

12.4 Mobility in soil

Components:

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

Distribution among environmental compartments : Remarks: medium mobility in soil

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 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

13.1 Waste treatment methods

Product : 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.
Do not re-use empty containers.
Packaging that is not properly emptied must be disposed of as the unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3082

ADR : UN 3082

RID : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Malathion)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Malathion)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Malathion)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Malathion)

IATA : Environmentally hazardous substance, liquid, n.o.s.
(Malathion)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	9	
ADR	9	
RID	9	
IMDG	9	
IATA	9	

14.4 Packing group

ADN

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)

RID

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

ADN
Environmentally hazardous : yes

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 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.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 75, 3 If you intend to use this product as

		tattoo ink, please contact your vendor. benzene (Number on list 72, 5, 29, 28)
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	malathion (ISO) [containing ≤ 0,03 % isomalathion]
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E1	ENVIRONMENTAL HAZARDS

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	:	Not in compliance with the inventory

TECI : Not in compliance with the inventory

15.2 Chemical safety assessment

A chemical safety assessment is not required for this product (mixture).

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H335	:	May cause respiratory irritation.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Skin Sens.	:	Skin sensitisation
STOT SE	:	Specific target organ toxicity - single exposure
DK OEL	:	Denmark. Occupational Exposure Limits
DK OEL / S	:	Exposure period of 15 minutes
DK OEL / GV	:	Long term exposure limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

Disclaimer
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