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



Malathion 440 g/L EW

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

1.1 Product identifier

Product name Malathion 440 g/L EW

Other means of identification

Product code 50001290

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

Use of the Sub- : Can be used as insecticide only.

stance/Mixture

Recommended restrictions: Use as recommended by the label. **on use**For professional users only.

1.3 Details of the supplier of the safety data sheet

<u>Supplier Address</u> 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)

Skin sensitisation, Sub-category 1B H317: May cause an allergic skin reaction.

Short-term (acute) aquatic hazard, Cate- H400: Very toxic to aquatic life.

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



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gory 1

Long-term (chronic) aquatic hazard, Cat-

egory 1

H410: Very toxic to aquatic life with long lasting

effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word Warning

Hazard statements May cause an allergic skin reaction. H317

Very toxic to aquatic life with long lasting effects.

Prevention: Precautionary statements

> P261 Avoid breathing mist or vapours. P273 Avoid release to the environment.

P280 Wear protective gloves.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water and

soap.

P333 + P313 If skin irritation or rash occurs: Get medical

advice/ attention.

P362 + P364 Take off contaminated clothing and wash it

before reuse.

P391 Collect spillage.

Disposal:

Dispose of contents and/or container in accordance

with hazardous waste regulations.

Hazardous components which must be listed on the label:

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

Additional Labelling

EUH401 To avoid risks to human health and the environment, comply with the instruc-

tions for use.

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.

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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

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	41
		M-Factor (Chronic aquatic toxicity): 1.000 Acute toxicity estimate Acute oral toxicity:	
Polyacrylic acid	9003-01-4	1.857 mg/kg Acute Tox. 4; H302 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) Aquatic Acute 1; H400 Aquatic Chronic 2; H411	>= 0,25 - < 1
		M-Factor (Acute aquatic toxicity): 1 Acute toxicity estimate	
For evaluation of abbreviations so		Acute oral toxicity: 617 mg/kg	

For explanation of abbreviations see section 16.

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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.

Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems producing respiratory depression. If any sign of cholinesterase inhibition occurs, call a doctor (physician), clinic or hospital immediately. Explain that the victim has been exposed to an organophosphorus insecticide. Describe his/her condition and the extent of exposure. Immediately remove the exposed person from the area where the

product is present.

This product contains an anticholinesterase compound. Do not use if under medical advice not to work with such com-

pounds.

Protection of first-aiders : First Aid responders should pay attention to self-protection

and use the recommended protective clothing

Avoid inhalation, ingestion and contact with skin and eyes. If potential for exposure exists refer to Section 8 for specific

personal protective equipment.

If inhaled : Move to fresh air.

If unconscious, place in recovery position and seek medical

advice.

If symptoms persist, call a physician.

In case of skin contact : Take off all contaminated clothing immediately.

Wash contaminated clothing before re-use.

Wash off immediately with plenty of water for at least 15

minutes.

Get medical attention 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 : Do not induce vomiting without medical advice.

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.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Exposure may result in nausea, vomiting, tremors, cramps,

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weakness, shortness of breath, a slowed heart rate, headache, abdominal pain, and diarrhea.

Exposure to skin may result in mild symptoms include itching, hives or rash, and skin redness. More severe symptoms include sneezing, itchy watery eyes, and difficulty breathing. On contact, the first symptoms to appear may be irritation. Symptoms of cholinesterase inhibition: nausea, headache, 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.

Risks : May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment

Treat symptomatically.

ANTIDOTE: If symptoms of cholinesterase inhibition (see subsection 4.2.) 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 the chemical product is fully metabolised.

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.

If any of the signs of cholinesterase inhibition occurs, call a doctor (physician), clinic or hospital immediately. Explain that the victim has been exposed to an organophosphorus insecticide.

Describe his/her condition and the extent of exposure. Immediately remove the exposed person from the area where the product is present.

In an industrial setting, the antidote atropine sulphate should be available at the workplace.

Decontamination procedures such as whole body washing, gastric lavage and administration of activated charcoal are often required.

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. Much information on (acetyl)cholinesterase inhibition and its treatment can be found on the internet.

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This product contains a reversible cholinesterase inhibitor. Atropine sulfate is antidotal. Support respiration as needed with removal of secretions, maintenance of a patent airway and, if necessary, artificial ventilation. If cyanosis is absent: Adults - start treatment by giving 2 mg atropine intravenously or intramuscularly, if necessary, and repeat with 0.4 - 2.0 mg atropine at 15 minute intervals until atropinization occurs (tachycardia, flushed skin, dry mouth, mydriasis); Children under 12 - initial dose = 0.05 mg/kg body weight and repeat dose = 0.02 - 0.05 mg/kg body weight. Start 2-PAM at the same time, following manufacturer's recommended dosages and administration. Morphine, reserpine,phenothiazines and theophylline are probably contraindicated.

At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Observe patient to ensure that these symptoms do not recur as atropinization wears off. If in eyes, instill one drop of homatropine. It may be helpful to show this safety data sheet to physician.

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 fire-

fighting

Do not allow run-off from fire fighting to enter drains or water

courses.

Hazardous combustion prod: :

ucts

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.

Specific extinguishing meth-

ods

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 cir-

cumstances 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.

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



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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.

For disposal considerations see section 13.

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 absor-

bent material.

Pick up and transfer to properly labelled containers. 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 : Do not breathe vapours/dust.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes. For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the ap-

plication area.

Dispose of rinse water in accordance with local and national

regulations.

Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being

used.

In an industrial environment, it is recommended to avoid all personal contact with the product, if possible, by using closed

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systems with remote system control. The material should be handled by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

The product should never be heated above 55°C. Local heat-

ing above this temperature should be avoided as well.

Advice on protection against

fire and explosion

Normal measures for preventive fire protection.

Hygiene measures : General industrial hygiene practice. 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.

salety standards.

Advice on common storage : Do not store near acids.

Recommended storage tem-

perature

<= 25 °C

Further information on stor-

age 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

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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 ≤	Fresh water	1,2
0,03 % isomalathion]		
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

Ensure that eyewash stations and safety showers are close

to the workstation location.

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. Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most

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normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be

required.

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable per-

sonal respiratory protection and protective suit.

Protective measures : Plan first aid action before beginning work with this product.

Always have on hand a first-aid kit, together with proper in-

structions.

Ensure that eye flushing systems and safety showers are

located close to the working place. Wear suitable protective equipment.

The precautions mentioned relate mainly to the handling of the undiluted product and the preparation of the spray solu-

tion, but may also be recommended for spraying.

In the context of professional phytosanitary use as recommended, the end user must refer to the indications on the label. In other cases, it is recommended to use the protec-

tions above.

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/range : < 0 °C

Boiling point/boiling range : No data available

Flammability : Not applicable

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



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Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Flash point : $> 100 \, ^{\circ}\text{C}$

Method: Pensky-Martens closed cup - PMCC

Auto-ignition temperature : No data available

Decomposition temperature : No data available

pH : 4,53 (25 °C)

Concentration: 100 %

(undiluted)

Viscosity

Viscosity, dynamic : 1.092 mPa.s (20 °C)

973 mPa.s (40 °C)

Viscosity, kinematic : 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

Vapour pressure : No data available

Relative density : 1,072 (20 °C)

Density : No data available

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Bulk density : No data available

Relative vapour density : No data available

Particle characteristics

Particle size : No data available

Particle Size Distribution : No data available

Shape : No data available

9.2 Other information

Explosives : Not explosive

Oxidizing properties : Non-oxidizing

Self-ignition : No data available

Evaporation rate : No data available

Molecular weight : Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Malathion will decompose rapidly when heated to temperatures above 140°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

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



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

10.4 Conditions to avoid

Conditions to avoid : Avoid extreme temperatures

Avoid formation of aerosol.

Heating of the mixture may evolve harmful and irritant va-

pours.

10.5 Incompatible materials

Materials to avoid : Avoid strong acids, bases, and oxidizers

Amines

The product can corrode metals (but does not meet the crite-

ria for classification).

10.6 Hazardous decomposition products

Stable under recommended storage conditions.

SECTION 11: Toxicological information

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

Information on likely routes of : Inhalation

exposure

Acute toxicity

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

Product:

Acute oral toxicity : LD50 (Rat, female): > 2.000 mg/kg

Method: OECD Test Guideline 425

Assessment: The substance or mixture has no acute oral tox-

icity

Acute inhalation toxicity : LC50 (Rat, male and female): > 5,75 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rat): > 4.000 mg/kg

Method: OECD Test Guideline 402

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

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Method: OECD Test Guideline 401

Remarks: Based on data from similar materials

LD50 (Rat): > 5.000 mg/kg Method: FIFRA 81.01

Acute inhalation toxicity : LC50 (Rat): > 5,02 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Method: EPA OPP 81 - 3

Assessment: The component/mixture is minimally toxic after

short term inhalation.

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

Method: FIFRA 81.02

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 inhala-

tion 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 : OECD Test Guideline 404

Result : slight irritation

Components:

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

Method : FIFRA 81.05
Result : slight irritation

Polyacrylic acid:

Species : Rabbit Exposure time : 4 h

Method : OECD Test Guideline 404

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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 slight irritation

Remarks Vapours may cause irritation to the eyes, respiratory system

and the skin.

Components:

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

Method FIFRA 81.04 Result slight irritation

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 Local lymph node assay (LLNA)

Species Mouse

Method OECD Test Guideline 429

The product is a skin sensitiser, sub-category 1B. Result

Remarks Causes sensitisation.

Components:

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

Test Type **Buehler Test** Method FIFRA 81.06

Result Does not cause skin sensitisation.

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

Test Type Magnussen-Kligman test

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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

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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: RatApplication Route: IngestionExposure time: 24 month(s)NOAEL: 6.000 ppmResult: positive

Remarks : Probably carcinogenic to humans (IARC 2A)

Carcinogenicity - Assess-

ment

Occurrence of tumors has been observed at excessive expo-

sure levels. This can be considered as not relevant for possi-

ble carcinogenicity to humans during normal use.

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 develop-

ment

Test Type: Embryo-foetal development

Species: Rat

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



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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 - As-

sessment

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 develop-

ment

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

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Remarks: Based on data from similar materials

Reproductive toxicity - As-

sessment

Weight of evidence does not support classification for repro-

ductive 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

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



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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 consid-

ered 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 : No neurotoxicity observed in animal studies

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Salmo gairdneri): 0,74 mg/l

Exposure time: 96 h

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 1,8 μg/l

Exposure time: 48 h

Remarks: Based on data from similar materials

Toxicity to soil dwelling or-

ganisms

LC50: 285 mg/kg Exposure time: 14 d

Species: Eisenia fetida (earthworms)

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



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Toxicity to terrestrial organ-LD50: 528 mg/kg

Species: Colinus virginianus (Bobwhite quail) isms

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 tox-

icity)

1.000

Toxicity to fish (Chronic tox-

icity)

NOEC: 0,021 mg/l Exposure time: 37 d

Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic 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-

ganisms

613 mg/kg

Exposure time: 14 d

Species: Eisenia fetida (earthworms)

Remarks: No significant adverse effect on nitrogen mineraliza-

No significant adverse effect on carbon mineralization.

Toxicity to terrestrial organ-

isms

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

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



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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 inver-

tebrates.

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

ma/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

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



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Method: EU Method C3

M-Factor (Acute aquatic tox- : 1

icity)

NOEC (Pseudomonas putida): 41 mg/l Toxicity to microorganisms

Exposure time: 16 h

Test Type: Cell multiplication inhibition test

12.2 Persistence and degradability

Product:

Biodegradability Remarks: Malathion is biodegradable but does not meet the

> criteria for being readily biodegradable. It undergoes rapid degradation in the environment and in wastewater treatment plants. No adverse effects are found at concentrations up to 100 mg/l in wastewater treatment plants. Degradation occurs

both aerobically and anaerobically, mostly biologically.

Components:

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

Biodegradability : Result: Not readily biodegradable.

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

Product:

Remarks: No data available Bioaccumulation

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: nlog Pow: 0,27 (20 °C)

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



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octanol/water 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 consid-

ered 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 infor-

mation

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 : According to the Waste Framework Directive (2008/98/EC),

possibilities for reuse or reprocessing should first be considered. If this is not possible, the material can be disposed of by removal to a licensed chemical destruction plant or by con-

trolled incineration with flue gas scrubbing.

Do not contaminate water, foodstuffs, feed or seed by storage

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



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or disposal. Do not discharge to sewer systems.

The product should not be allowed to enter drains, water

courses or the soil.

Do not contaminate ponds, waterways or ditches with chemi-

cal 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.

Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

It is recommended to consider possible ways of disposal in

the following order:

1. Reuse or recycling should first be considered. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.

2. Controlled incineration with flue gas scrubbing is possible

for combustible packaging materials.

3. Delivery of the packaging to a licensed service for disposal

of hazardous waste.

4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill, containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

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)

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



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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 : 964

aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passen- : 964

ger aircraft)

Packing instruction (LQ) : Y964
Packing group : III

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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 3

benzene (Number on list 72, 5, 29,

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

Not applicable

Regulation (EC) No 1005/2009 on substances that de-

plete the ozone layer

: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollu-

tants (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]

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



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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.

ENVIRONMENTAL HAZARDS

Other regulations:

Young people under the age of 18 are not allowed to use or be exposed to the product professionally. Young people above the age of 15 are, however, except from this rule if the product is a necessary part of their education.

E1

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 : On the inventory, or in compliance with the inventory

ISHL : On the inventory, or in compliance with the inventory

KECI: On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or 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.
H335 : May cause respiratory irritation.

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



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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.

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 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:

Skin Sens. 1B H317 Based on product data or assessment Aquatic Acute 1 H400 Based on product data or assessment

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



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Aquatic Chronic 1 H410 Calculation method

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