

SAFETY DATA SHEET



MURON® insecticide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	24.07.2023	50000662	Date of first issue: 24.07.2023

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

1.1 Product identifier

Product name MURON® insecticide

Other means of identification

Product code 50000662

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

Use of the Sub-
stance/Mixture : Insecticide

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

1.3 Details of the supplier of the safety data sheet

Supplier Address FMC Agricultural Solutions A/S
Thyborønvej 78
DK-7673 Harbøre
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:
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)
1 202 / 483-7616 (CHEMTREC - Alternate International)

Medical emergency:
All other countries: +1 651 / 632-6793 (Collect)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters airways.

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

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Eye irritation, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 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 : Danger

Hazard statements :

H304	May be fatal if swallowed and enters airways.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P261 Avoid breathing mist or vapours.
 P280 Wear protective gloves/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 P302 + P352 IF ON SKIN: Wash with soap and 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.

Disposal:

P501 Dispose of contents and/or container in accordance with hazardous waste regulations.

Hazardous components which must be listed on the label:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified
 malathion (ISO) [containing ≤ 0,03 % isomalathion]
 acetic anhydride

Additional Labelling

EUH066	Repeated exposure may cause skin dryness or cracking.
EUH401	To avoid risks to human health and the environment, comply with the instruc-

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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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5 265-198-5 649-424-00-3	Asp. Tox. 1; H304 STOT SE 3; H336 Aquatic Chronic 2; H411	>= 30 - < 50
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	>= 30 - < 50
acetic anhydride	108-24-7 203-564-8 607-008-00-9	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 1 - < 3
calcium bis(dodecylbenzenesulphonate), branched	70528-83-5 274-654-2	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Eye Dam. 1; H318	>= 1 - < 3

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.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.

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| If inhaled | : Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice. |
| In case of skin contact | : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes. |
| In case of eye contact | : Immediately flush eye(s) with plenty of water.
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 induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital. |

4.2 Most important symptoms and effects, both acute and delayed

- | | |
|-------|---|
| Risks | : May be fatal if swallowed and enters airways.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause drowsiness or dizziness.
Repeated exposure may cause skin dryness or cracking. |
|-------|---|

4.3 Indication of any immediate medical attention and special treatment needed

- | | |
|-----------|--------------------------|
| Treatment | : Treat symptomatically. |
|-----------|--------------------------|
-

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | |
|--------------------------------|--|
| Suitable extinguishing media | : Dry chemical, CO ₂ , water spray or regular foam. |
| Unsuitable extinguishing media | : High volume water jet |

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 products | : Carbon oxides
Thermal decomposition can lead to release of irritating gases and vapours.
Oxides of phosphorus
Sulphur oxides |

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5.3 Advice for firefighters

- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : 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.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.
-

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Never return spills in original containers for re-use.
Mark the contaminated area with signs and prevent access to unauthorized personnel.
Treat recovered material as described in the section "Disposal considerations".
For disposal considerations see section 13.

6.2 Environmental precautions

- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
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 : Neutralize with chalk, alkali solution or ammonia.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
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 : Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.

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Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
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.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures : 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 : No smoking. 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. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : Do not store near acids.

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

7.3 Specific end use(s)

Specific use(s) : The product is an approved pesticide and can only be used for the purposes for which it is approved, according to the conditions contained in the label approved by the competent authorities.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
acetic anhydride	Workers	Inhalation	Long-term systemic effects	4,2 mg/m ³
	Workers	Inhalation	Long-term local effects	4,2 mg/m ³
	Workers	Inhalation	Acute local effects	12,6 mg/m ³

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

Substance name	Environmental Compartment	Value
malathion (ISO) [containing ≤	Fresh water	1,2

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0,03 % isomalathion]		
acetic anhydride	Fresh water	3,058 mg/l
	Marine water	0,3058 mg/l
	Sewage treatment plant	115 mg/l
	Fresh water sediment	11,36 mg/kg dry weight (d.w.)
	Marine sediment	1,136 mg/kg dry weight (d.w.)
	Soil	0,470 mg/kg dry weight (d.w.)
	Intermittent use (freshwater)	30,58 mg/l

8.2 Exposure controls

Personal protective equipment

- Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.
- 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 : No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Physical state : liquid
- Colour : light yellow
- Odour : aromatic
- Odour Threshold : No data available
- pH : 3,7
In a 1% aqueous dispersion
- Melting point/freezing point : No data available
- Initial boiling point and boiling range : No data available
- Flash point : 64 °C

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Method: Pensky-Martens closed cup

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative density : 1,044

Solubility(ies)
Water solubility : Miscible

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : 6,4 mPa.s (20 °C)

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : Non-oxidizing

9.2 Other information

Particle size : No data available

Particle Size Distribution : No data available

Self-ignition : > 400 °C

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.

10.3 Possibility of hazardous reactions

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

Vapours may form explosive mixture with air.

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10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : No data available

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 4,9 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Remarks: Based on data from similar materials

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 4,688 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

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

Acute oral toxicity : LD50 (Rat): 1.857 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

LD50 (Rat): > 5.000 mg/kg

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Method: FIFRA 81.01

Acute toxicity estimate: 1.857 mg/kg
Method: ATE value derived from LD50/LC50 value

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

acetic anhydride:

Acute oral toxicity : LD50 (Rat, male and female): 630 mg/kg

Acute toxicity estimate: 630 mg/kg
Method: ATE value derived from LD50/LC50 value

Acute inhalation toxicity : LC50 (Rat, male and female): 1,670 mg/l
Exposure time: 6 h
Test atmosphere: vapour

calcium bis(dodecylbenzenesulphonate), branched:

Acute oral toxicity : Acute toxicity estimate: 3.333 mg/kg

Acute dermal toxicity : Acute toxicity estimate: 1.470 mg/kg

Skin corrosion/irritation

Repeated exposure may cause skin dryness or cracking.

Product:

Result : slight irritation

Remarks : May cause skin irritation and/or dermatitis.

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species : Rabbit
Assessment : Repeated exposure may cause skin dryness or cracking.
Result : No skin irritation
Remarks : Minimal effects that do not meet the threshold for classification.
Based on data from similar materials

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

Method : FIFRA 81.05
Result : slight irritation

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acetic anhydride:

Result : Corrosive after 3 minutes to 1 hour of exposure

calcium bis(dodecylbenzenesulphonate), branched:

Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : irritating

Remarks : May cause irreversible eye damage.

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species : Rabbit
Assessment : No eye irritation
Remarks : Minimal effects that do not meet the threshold for classification.
Based on data from similar materials

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

Method : FIFRA 81.04
Result : slight irritation

acetic anhydride:

Species : Rat
Result : slight irritation

calcium bis(dodecylbenzenesulphonate), branched:

Result : Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Result : Probability or evidence of low to moderate skin sensitisation rate in humans

Remarks : Causes sensitisation.

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Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Test Type	: Maximisation Test
Species	: Guinea pig
Result	: Not a skin sensitizer.
Remarks	: Based on data from similar materials

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)
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

Germ cell mutagenicity

Not classified based on available information.

Product:

Germ cell mutagenicity- Assessment	: Weight of evidence does not support classification as a germ cell mutagen.
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Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Genotoxicity in vitro	: Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
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Genotoxicity in vivo	: Test Type: Bone marrow chromosome aberration Species: Rat Application Route: inhalation (vapour) Result: negative
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malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Genotoxicity in vitro	: Test Type: Ames test Result: negative
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	Test Type: In vitro mammalian cell gene mutation test Result: positive Remarks: Based on data from similar materials
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	Test Type: unscheduled DNA synthesis assay Result: negative
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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

acetic anhydride:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
Result: Conflicting results have been seen in different studies.

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Rat (male and female)
Application Route: inhalation (vapour)
Result: negative

Carcinogenicity

Not classified based on available information.

Product:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species : Rat, male and female
Application Route : inhalation (vapour)
Exposure time : 12 month(s)
NOAEC : 1,8 mg/l
Result : negative
Remarks : Based on data from similar materials

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

malathion (ISO) [containing $\leq 0,03$ % isomalathion]:

Species : Rat
Application Route : Ingestion
Exposure time : 24 month(s)

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NOAEL : 6.000 ppm
Result : positive

Remarks : Probably carcinogenic to humans (IARC 2A)

Reproductive toxicity

Not classified based on available information.

Product:

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

Components:

malathion (ISO) [containing $\leq 0,03$ % 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.

acetic anhydride:

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rabbit
Application Route: Oral
Dose: 2.5,16,74.3,345,1600mg/kgbw/d
Duration of Single Treatment: 13 d
General Toxicity Maternal: LOAEL: 74,3 mg/kg bw/day
Embryo-foetal toxicity: NOAEL: 1.600 mg/kg bw/day
Symptoms: Malformations were observed.
Result: negative
Remarks: Based on data from similar materials

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

STOT - single exposure

May cause drowsiness or dizziness.

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Product:

Assessment : May cause drowsiness or dizziness.

Components:

acetic anhydride:

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

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species	: Rat, male and female
NOAEC	: 0,9 - 1,8 mg/l
Application Route	: inhalation (vapour)
Exposure time	: 12 months

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

acetic anhydride:

Species	: Rat, male and female
LOAEC	: 25 ppm
Application Route	: Inhalation
Test atmosphere	: vapour
Exposure time	: 2 weeks
Dose	: 25, 100, 400 ppm

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

May be fatal if swallowed and enters airways.

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

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

acetic anhydride:

The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

Experience with human exposure**Components:****Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Skin contact : Symptoms: Repeated exposure may cause skin dryness or cracking.

Neurological effects**Components:****malathion (ISO) [containing ≤ 0,03 % isomalathion]:**

Remarks : No neurotoxicity observed in animal studies

Further information**Product:**

Remarks : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Concentrations substantially above the TLV value may cause narcotic effects.
Solvents may degrease the skin.

Components:**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Remarks : Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

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SECTION 12: Ecological information**12.1 Toxicity****Product:****Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

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

Components:**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 1,4 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): 1 - 3 mg/l
Exposure time: 24 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : LL50 (Tetrahymena pyriformis): 677,9 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EL50: 0,89 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

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)

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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 organisms : 613 mg/kg
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)

acetic anhydride:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 300,82 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)): > 300,82 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Skeletonema costatum (marine diatom)): > 300,82 mg/l
Exposure time: 72 h
Test Type: static test
Remarks: Based on data from similar materials

EC50 (Skeletonema costatum (marine diatom)): 300,82 mg/l
Exposure time: 72 h
Test Type: static test
Remarks: Based on data from similar materials

Toxicity to microorganisms : NOEC (Pseudomonas putida): 1.150 mg/l

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Exposure time: 16 h
Test Type: Growth inhibition

calcium bis(dodecylbenzenesulphonate), branched:

Toxicity to fish	:	LC50 (Fish): > 1 - 10 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 - 10 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	EC50 (algae): > 1 - 10 mg/l Exposure time: 72 h Remarks: Based on data from similar materials

12.2 Persistence and degradability

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 58,6 % Exposure time: 28 d Method: OECD Test Guideline 301F Remarks: Based on data from similar materials
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malathion (ISO) [containing ≤ 0,03 % isomalathion]:

Biodegradability	:	Result: Not readily biodegradable.
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acetic anhydride:

Biodegradability	:	Inoculum: activated sludge Result: Readily biodegradable. Biodegradation: 96 % Exposure time: 20 d Remarks: Based on data from similar materials
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calcium bis(dodecylbenzenesulphonate), branched:

Biodegradability	:	Result: Readily biodegradable.
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12.3 Bioaccumulative potential

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Bioaccumulation	:	Remarks: The product/substance has a potential to bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: 3,72 Method: QSAR

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malathion (ISO) [containing $\leq 0,03$ % 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

acetic anhydride:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 3,16
Method: QSAR

Partition coefficient: n-octanol/water : log Pow: -0,577 (25 °C)
pH: 7
Method: QSAR

calcium bis(dodecylbenzenesulphonate), branched:

Bioaccumulation : Bioconcentration factor (BCF): 1
Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil**Components:****Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Distribution among environmental compartments : Remarks: Expected to partition to sediment and wastewater solids. Moderately volatile.

malathion (ISO) [containing $\leq 0,03$ % 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 Other adverse effects**Product:**

Endocrine disrupting potential : 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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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.
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

14.1 UN 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)

ADN : 9

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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
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ADR

Environmentally hazardous	:	yes
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RID

Environmentally hazardous	:	yes
---------------------------	---	-----

IMDG

Marine pollutant	:	yes
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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 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

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

H226	: Flammable liquid and vapour.
H302	: Harmful if swallowed.

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H304	: May be fatal if swallowed and enters airways.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H332	: Harmful if inhaled.
H336	: May cause drowsiness or dizziness.
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.
EUH066	: Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Asp. Tox.	: Aspiration hazard
Eye Dam.	: Serious eye damage
Flam. Liq.	: Flammable liquids
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - 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; 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

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Other information :

Classification of the mixture:

Asp. Tox. 1	H304
Skin Sens. 1B	H317
Eye Irrit. 1	H318
STOT SE 3	H336
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

Based on product data or assessment
Based on product data or assessment
Based on product data or assessment
Based on product data or assessment
Based on product data or assessment
Based on product data or assessment

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