

## **Dichlofenthion Formulation**

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 1552595-00017 Date of first issue: 14.04.2017

**Section 1: Identification** 

**Product identifier** : Dichlofenthion Formulation

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product Restrictions on use : Not applicable

Manufacturer or supplier's details

Company : MSD

Address : 50 Tuas West Drive

Singapore - Singapore 638408

Telephone : +1-908-740-4000

Emergency telephone number : 65 6697 2111 (24/7/365)

E-mail address : EHSDATASTEWARD@msd.com

#### Section 2: Hazard identification

Classification of the substance or mixture

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Skin corrosion/irritation : Category 1

Serious eye damage/eye irri-

tation

Category 1

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 2

Carcinogenicity (Oral) : Category 1A

Reproductive toxicity : Category 2

Specific target organ toxicity - :

single exposure

Category 1 (Nervous system)

Specific target organ toxicity - :

single exposure

Category 3

Specific target organ toxicity - : Category 2 (Nervous system, Respiratory Tract)



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repeated exposure

Aspiration hazard : Category 1

Short-term (acute) aquatic

hazard

Category 1

Long-term (chronic) aquatic

hazard

Category 1

# GHS Label elements, including precautionary statements

Hazard pictograms :











Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction.

H317 May cause an allergic skin reaction. H335 May cause respiratory irritation. H341 Suspected of causing genetic defects. H350 May cause cancer if swallowed.

H361d Suspected of damaging the unborn child. H370 Causes damage to organs (Nervous system).

H373 May cause damage to organs (Nervous system, Respira-

tory Tract) through prolonged or repeated exposure. H410 Very toxic to aquatic life with long lasting effects.

# Precautionary statements : Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read

and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames

and other ignition sources. No smoking. P233 Keep container tightly closed.

P241 Use explosion-proof electrical/ ventilating/ lighting equip-

ment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P260 Do not breathe vapours.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of

the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protec-



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tion/ face protection/ hearing protection.

#### Response:

P301 + P330 + P331 + P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/ doctor.

P303 + P361 + P353 + P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER/ doctor.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P362 + P364 Take off contaminated clothing and wash it before

P391 Collect spillage.

#### Storage:

P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.

#### Disposal:

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

## Other hazards which do not result in classification

Vapours may form explosive mixture with air.

## Section 3: Composition/information on ingredients

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
Tar, wood	91722-33-7	>= 10 -< 20
Rosin	8050-09-7	>= 10 -< 20
Tar, coal	8007-45-2	>= 10 -< 20
Ethylbenzene	100-41-4	>= 1 -< 10
Xylene	1330-20-7	>= 1 -< 10
Dichlofenthion (ISO)	97-17-6	>= 3 -< 10
Sodium hydroxide	1310-73-2	>= 2 -< 3
Phenol	108-95-2	>= 1 -< 2.5
m-Cresol	108-39-4	>= 1 -< 3
p-Cresol	106-44-5	>= 1 -< 3



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#### Section 4: First-aid measures

Description of necessary first-aid measures

General advice : In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

In case of skin contact : In case of contact, immediately flush skin with plenty of water

for at least 15 minutes while removing contaminated clothing

and shoes.

Get medical attention immediately.

Wash clothing before reuse.

Thoroughly clean shoes before reuse.
In case of eye contact : In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention immediately.

If swallowed : If swallowed, DO NOT induce vomiting.

If vomiting occurs have person lean forward.

Call a physician or poison control centre immediately.

Rinse mouth thoroughly with water.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed.

May be fatal if swallowed and enters airways.

May cause an allergic skin reaction.
Causes serious eye damage.
May cause respiratory irritation.
Suspected of causing genetic defects.
May cause cancer if swallowed.

Suspected of damaging the unborn child.

Causes damage to organs.

May cause damage to organs through prolonged or repeated

exposure.

Causes severe burns.
Causes digestive tract burns.

First Aid responders should pay attention to self-protection,

and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

#### Section 5: Fire-fighting measures

Protection of first-aiders

#### **Extinguishing media**



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Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

High volume water jet

#### Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

: Do not use a solid water stream as it may scatter and spread

tire

Flash back possible over considerable distance. Vapours may form explosive mixtures with air.

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod: :

ucts

Carbon oxides Metal oxides

Nitrogen oxides (NOx)

#### Special protective actions for fire-fighters

Special protective equipment :

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

#### Section 6: Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

Personal precautions : Remove all sources of ignition.

Use personal protective equipment.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

#### **Environmental precautions**

Environmental precautions : Avoid release to the environment.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

## Methods and materials for containment and cleaning up

Methods for cleaning up : Non-sparking tools should be used.

Soak up with inert absorbent material.



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Suppress (knock down) gases/vapours/mists with a water spray jet.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

#### Section 7: Handling and storage

#### Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust

ventilation.

Use explosion-proof electrical, ventilating and lighting equip-

ment.

Advice on safe handling : Do not get on skin or clothing.

Do not breathe vapours.

Do not swallow. Do not get in eyes.

Wash skin thoroughly after handling.

Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

sessment

Non-sparking tools should be used. Keep container tightly closed.

Already sensitised individuals, and those susceptible

to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respira-

tory irritants or sensitisers.

Keep away from heat, hot surfaces, sparks, open flames and

other ignition sources. No smoking.

Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product.

Take care to prevent spills, waste and minimize release to the

environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye

flushing systems and safety showers close to the working

place.

When using do not eat, drink or smoke.

Contaminated work clothing should not be allowed out of the

workplace.

Wash contaminated clothing before re-use.

The effective operation of a facility should include review of



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engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

#### Conditions for safe storage, including any incompatibilities

Conditions for safe storage : Keep in properly labelled containers.

Store locked up. Keep tightly closed.

Keep in a cool, well-ventilated place.

Store in accordance with the particular national regulations.

Keep away from heat and sources of ignition.

Materials to avoid : Do not store with the following product types:

Self-reactive substances and mixtures

Organic peroxides
Oxidizing agents
Flammable gases
Pyrophoric liquids
Pyrophoric solids

Self-heating substances and mixtures

Poisonous gases

Explosives

## Section 8: Exposure controls/personal protection

#### **Control parameters**

#### **Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Rosin	8050-09-7	TWA (Inhalable particulate matter)	0.001 mg/m3 (total Resin acids)	ACGIH
Ethylbenzene	100-41-4	PEL (short term)	125 ppm 543 mg/m3	SG OEL
		PEL (long 100 ppm term) 434 mg/m3		SG OEL
		TWA	20 ppm	ACGIH
Xylene	1330-20-7	PEL (long term)	100 ppm 434 mg/m3	SG OEL
		PEL (short term)	150 ppm 651 mg/m3	SG OEL
		TWA	20 ppm	ACGIH
Dichlofenthion (ISO)	97-17-6	TWA	20 μg/m3 (OEB 3)	Internal
	Further information: Skin			
		Wipe limit	200 μg/100 cm <sup>2</sup> Interna	
Sodium hydroxide	1310-73-2	PEL (short term)	2 mg/m3	SG OEL



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		C	2 mg/m3	ACGIH
Phenol	108-95-2	PEL (long	5 ppm	SG OEL
		term)	19 mg/m3	
		TWA	5 ppm	ACGIH
m-Cresol	108-39-4	TWA (Inhalable fraction and vapor)	20 mg/m3	ACGIH
p-Cresol	106-44-5	TWA (Inhalable fraction and vapor)	20 mg/m3	ACGIH

#### **Biological occupational exposure limits**

Components	CAS-No.	Control parameters	Biological specimen	Sam- pling time	Permissible concentration	Basis
Phenol	108-95-2	Phenol	Urine	End of shift (As soon as possible after exposure ceases)	250 mg/g creatinine	ACGIH BEI
Xylene	1330-20-7	methylhip- puric acid	Urine	,	1.5 g/g cre- atinine	SG BTLV
		Methylhip- puric acids	Urine	End of shift (As soon as possible after exposure ceases)	0.3 g/g creatinine	ACGIH BEI
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl gly- oxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	150 mg/g creatinine	ACGIH BEI

# Appropriate engineering control measures

Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., dripless quick connections).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).

Minimize open handling.

Use explosion-proof electrical, ventilating and lighting equip-



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ment.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Wear safety glasses with side shields or goggles.

If the work environment or activity involves dusty conditions,

mists or aerosols, wear the appropriate goggles.

Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or

aerosols.

Skin protection : Work uniform or laboratory coat.

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, dis-

posable suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially

contaminated clothing.

Respiratory protection : If adequate local exhaust ventilation is not available or expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection. Combined particulates and organic vapour type

Filter type

Material

Hand protection

: Chemical-resistant gloves

Remarks : Consider double gloving. Take note that the product is flam-

mable, which may impact the selection of hand protection.

#### Section 9: Physical and chemical properties

Appearance : viscous liquid

Colour : dark, brown

Odour : strong

Odour Threshold : No data available

pH : Not applicable

Melting point/freezing point : No data available

Initial boiling point and boiling

range

No data available

Flash point : 30 °C

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Not applicable



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Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower :

flammability limit

No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Density : 1,009 - 1,051 g/cm³ (20 °C)

Solubility(ies)

Water solubility : No data available

Partition coefficient: n-

octanol/water

: Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Particle characteristics

Particle size : Not applicable

## Section 10: Stability and reactivity

Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-

tions

Flammable liquid and vapour.

Vapours may form explosive mixture with air. Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition : No hazardo

products

: No hazardous decomposition products are known.

#### **Section 11: Toxicological information**

Information on likely routes of:

exposure

Inhalation Skin contact

Ingestion



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Eye contact

**Acute toxicity** 

Harmful if swallowed.

**Product:** 

Acute oral toxicity : Acute toxicity estimate: 1,713 mg/kg

Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l

Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg

Method: Calculation method

**Components:** 

Tar, wood:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Method: OECD Test Guideline 423

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

icity

Rosin:

Acute oral toxicity : LD50 (Rat): 2,800 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal

toxicity

Tar, coal:

Acute oral toxicity : LD50 (Rat): 1,700 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Ethylbenzene:

Acute oral toxicity : LD50 (Rat): 3,500 mg/kg

Acute inhalation toxicity : LC50 (Rat): 17.8 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Xylene:

Acute oral toxicity : LD50 (Rat): 3,523 mg/kg



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Method: Directive 67/548/EEC, Annex V, B.1.

Acute inhalation toxicity : LC50 (Rat): 27.571 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 4,200 mg/kg

Dichlofenthion (ISO):

Acute oral toxicity : LD50 (Rat): 172 mg/kg

LD50 (Rat): 270 mg/kg

Acute inhalation toxicity : LC50 (Rat): 1.75 mg/l

Acute dermal toxicity : LD50 (Rat): 355 mg/kg

LD50 (Rabbit): 6,000 mg/kg

Sodium hydroxide:

Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Phenol:

Acute oral toxicity : LD50 (Rat): 650 mg/kg

Method: OECD Test Guideline 401

Acute toxicity estimate (Humans): 140 - 290 mg/kg

Method: Expert judgement

Acute inhalation toxicity : LC0 (Rat): 0.9 mg/l

Exposure time: 8 h

Test atmosphere: dust/mist

Assessment: Corrosive to the respiratory tract.

Acute toxicity estimate (Humans): > 0.9 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Method: Expert judgement

Acute dermal toxicity : LD50 (Rabbit): 660 mg/kg

Method: OECD Test Guideline 402

Acute toxicity estimate (Humans): 300 mg/kg

Method: Expert judgement

m-Cresol:

Acute oral toxicity : LD50 (Rat): 121 mg/kg

Remarks: Based on data from similar materials



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Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): 301 mg/kg

Remarks: Based on data from similar materials

p-Cresol:

Acute oral toxicity : LD50 (Rat): 172 - 250 mg/kg

Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): 213 - 426 mg/kg

Skin corrosion/irritation

Causes severe burns.

**Components:** 

Tar, wood:

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 439

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 431

Result : Skin irritation

Rosin:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Tar, coal:

Species : Rabbit

Result : Mild skin irritation

Xylene:

Species : Rabbit Result : Skin irritation

Dichlofenthion (ISO):

Result : Mild skin irritation

Remarks : Based on data from similar materials

Sodium hydroxide:

Result : Corrosive after 3 minutes or less of exposure

Phenol:



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Species : Rabbit

Result : Corrosive after 3 minutes to 1 hour of exposure

m-Cresol:

Species : Rabbit

Result : Corrosive after 3 minutes to 1 hour of exposure

p-Cresol:

Species : Rabbit

Result : Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

**Components:** 

Tar, wood:

Result : Irritation to eyes, reversing within 7 days

Rosin:

Species : Rabbit

Result : No eye irritation

Method : OECD Test Guideline 405

Tar, coal:

Species : Human

Result : Irreversible effects on the eye

Xylene:

Species : Rabbit

Result : Irritation to eyes, reversing within 21 days

Sodium hydroxide:

Result : Irreversible effects on the eye Remarks : Based on skin corrosivity.

Phenol:

Species : Rabbit

Result : Irreversible effects on the eye Method : OECD Test Guideline 405

m-Cresol:

Species : Rabbit

Result : Irreversible effects on the eye



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p-Cresol:

Species : Rabbit

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.

**Components:** 

Tar, wood:

Test Type : Local lymph node assay (LLNA)

Exposure routes : Skin contact

Species : Mouse

Method : OECD Test Guideline 429

Result : positive

Assessment : Probability or evidence of low to moderate skin sensitisation

rate in humans

Rosin:

Test Type : Local lymph node assay (LLNA)

Exposure routes : Skin contact Species : Mouse

Method : OECD Test Guideline 429

Result : negative

Tar, coal:

Test Type : Local lymph node assay (LLNA)

Exposure routes : Skin contact Species : Mouse

Method : OECD Test Guideline 429

Result : positive

Remarks : Based on data from similar materials

Assessment : Probability or evidence of skin sensitisation in humans

Xylene:

Test Type : Local lymph node assay (LLNA)

Exposure routes : Skin contact
Species : Mouse
Result : negative

Dichlofenthion (ISO):

Exposure routes : Dermal



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Assessment : Does not cause skin sensitisation.

Result : Weak sensitizer

Remarks : Based on data from similar materials

Sodium hydroxide:

Test Type : Human repeat insult patch test (HRIPT)

Exposure routes : Skin contact Result : negative

Phenol:

Test Type : Buehler Test Exposure routes : Skin contact Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

p-Cresol:

Test Type : Draize Test
Exposure routes : Skin contact
Species : Guinea pig
Result : negative

Germ cell mutagenicity

Suspected of causing genetic defects.

**Components:** 

Tar, wood:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Rosin:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: negative

Tar, coal:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471



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Result: positive

Remarks: Based on data from similar materials

Germ cell mutagenicity -

Assessment

Positive result(s) from in vivo non-mammalian somatic cell mutagenicity tests, supported by positive results from in vitro

mutagenicity assays.

Remarks: Based on national or regional regulation.

Ethylbenzene:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Genotoxicity in vivo : Test Type: Unscheduled DNA synthesis (UDS) test with

mammalian liver cells in vivo

Species: Mouse

Application Route: Inhalation Method: OECD Test Guideline 486

Result: negative

Xylene:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: In vitro sister chromatid exchange assay in mam-

malian cells Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)

Species: Mouse

Application Route: Skin contact

Result: negative

Phenol:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: positive



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Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Intraperitoneal injection

Method: OECD Test Guideline 474

Result: positive

Remarks: Annex VI From 1272/2008

Germ cell mutagenicity -

Assessment

Positive result(s) from in vivo mammalian somatic cell muta-

genicity tests.

m-Cresol:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: positive

Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow

cytogenetic test, chromosomal analysis)

Species: Mouse

Application Route: Ingestion Method: OECD Test Guideline 475

Result: negative

p-Cresol:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: positive

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)

Species: Mouse

Application Route: Ingestion

Method: OECD Test Guideline 478

Result: negative

Carcinogenicity

May cause cancer if swallowed.

**Components:** 

Tar, coal:

Species: MouseApplication Route: IngestionExposure time: 2 Years



## **Dichlofenthion Formulation**

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Result : positive

Carcinogenicity - Assess-

ment

Positive evidence from human epidemiological studies (oral)

Remarks: Based on national or regional regulation.

Ethylbenzene:

Species : Rat

Application Route : inhalation (vapour)

Exposure time : 104 weeks Result : positive

Remarks : The mechanism or mode of action may not be relevant in hu-

mans.

Xylene:

Species : Rat
Application Route : Ingestion
Exposure time : 103 weeks
Result : negative

Phenol:

Species : Mouse
Application Route : Ingestion
Exposure time : 103 weeks

Method : OECD Test Guideline 451

Result : negative

m-Cresol:

Species : Mouse, males
Application Route : Ingestion
Exposure time : 105 weeks
Result : equivocal

Remarks : Based on data from similar materials

Species : Mouse, female
Application Route : Ingestion
Exposure time : 106 - 107 weeks

Result : positive

Remarks : Based on data from similar materials

Carcinogenicity - Assess-

ment

Weight of evidence does not support classification as a car-

cinogen

p-Cresol:

Species : Mouse
Application Route : Ingestion
Exposure time : 106 - 107 weeks

Result : negative

Remarks : Based on data from similar materials



## **Dichlofenthion Formulation**

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#### Reproductive toxicity

Suspected of damaging the unborn child.

#### Components:

Rosin:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the

reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 422

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

Ethylbenzene:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: inhalation (vapour) Method: OECD Test Guideline 416

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: Inhalation Method: OECD Test Guideline 414

Result: negative

Xylene:

Effects on fertility : Test Type: One-generation reproduction toxicity study

Species: Rat

Application Route: inhalation (vapour)

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: inhalation (vapour)

Result: negative

Dichlofenthion (ISO):

Effects on foetal develop-

ment

: Test Type: Development

Species: Mouse

Application Route: Intraperitoneal

Developmental Toxicity: LOAEL: 80 mg/kg body weight Result: Reduced foetal weight, Embryotoxic effects. Remarks: Based on data from similar materials



## **Dichlofenthion Formulation**

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Test Type: Development

Species: Rat

Application Route: Intraperitoneal

Developmental Toxicity: LOAEL: 10 mg/kg body weight Result: Reduced foetal weight, Embryotoxic effects., No tera-

togenic effects

Remarks: Based on data from similar materials

Reproductive toxicity - As-

sessment

Suspected of damaging the unborn child.

Phenol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 416

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Mouse

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

m-Cresol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

**Application Route: Ingestion** 

Result: negative

Effects on foetal develop-

ment

: Test Type: Prenatal development toxicity study (teratogenicity)

Species: Rat

Application Route: Ingestion

Result: negative

p-Cresol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

**Application Route: Ingestion** 

Result: negative

STOT - single exposure

May cause respiratory irritation.

Causes damage to organs (Nervous system).



## **Dichlofenthion Formulation**

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Components:

Tar, coal:

Exposure routes : Ingestion
Target Organs : Nervous system

Assessment : Shown to produce significant health effects in animals at con-

centrations of 300 mg/kg bw or less.

Xylene:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

May cause damage to organs (Nervous system, Respiratory Tract) through prolonged or repeated exposure.

Components:

Tar, coal:

Target Organs : Respiratory Tract

Assessment : Shown to produce significant health effects in animals at con-

centrations of >0.02 to 0.2 mg/l/6h/d.

Exposure routes : inhalation (dust/mist/fume)

Target Organs : Respiratory Tract

Assessment : Shown to produce significant health effects in animals at con-

centrations of >0.02 to 0.2 mg/l/6h/d.

**Ethylbenzene:** 

Exposure routes : inhalation (vapour)
Target Organs : Auditory system

Assessment : Shown to produce significant health effects in animals at con-

centrations of >0.2 to 1 mg/l/6h/d.

Xylene:

Exposure routes : inhalation (vapour)
Target Organs : Auditory system

Assessment : Shown to produce significant health effects in animals at con-

centrations of >0.2 to 1 mg/l/6h/d.

Dichlofenthion (ISO):

Target Organs : Nervous system

Assessment : Causes damage to organs through prolonged or repeated

exposure.

Remarks : Based on human experience.

Phenol:

Target Organs : Central nervous system, Kidney, Liver, Skin

Assessment : May cause damage to organs through prolonged or repeated



## **Dichlofenthion Formulation**

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exposure.

#### Repeated dose toxicity

#### **Components:**

Rosin:

**Species** Rat, male **NOAEL** 335 mg/kg **Application Route** Ingestion Exposure time 90 Days

Method **OECD Test Guideline 408** 

Ethylbenzene:

**Species** Rat LOAEL 0.868 mg/l

**Application Route** inhalation (vapour)

Exposure time 13 Weeks

**Species** Rat **NOAEL** 75 mg/kg LOAEL 250 mg/kg **Application Route** Ingestion

**OECD Test Guideline 408** Method

Xylene:

**Species** Rat

LOAEL > 0.2 - 1 mg/lApplication Route inhalation (vapour)

Exposure time 13 Weeks

Remarks Based on data from similar materials

Species Rat LOAEL 150 mg/kg **Application Route** Ingestion Exposure time 90 Days

Dichlofenthion (ISO):

**Species** Rat NOAEL 0.75 mg/kg Application Route Oral

Exposure time 90 d

Dog 0.75 mg/kg NOAEL

Application Route Oral Exposure time 90 d

Phenol:

**Species** 



## **Dichlofenthion Formulation**

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Species : Rat
LOAEL : 300 mg/kg
Application Route : Ingestion
Exposure time : 90 Days

Method : OECD Test Guideline 408

Species : Rat

NOAEL : >= 0.1 mg/l

Application Route : inhalation (vapour)

Exposure time : 74 Days

Species : Rabbit
LOAEL : 260 mg/kg
Application Route : Skin contact
Exposure time : 18 Days

m-Cresol:

Species : Rat
NOAEL : 150 mg/kg
Application Route : Ingestion
Exposure time : 13 Weeks

Method : OECD Test Guideline 408

p-Cresol:

Species : Rat
NOAEL : 50 mg/kg
LOAEL : 175 mg/kg
Application Route : Ingestion
Exposure time : 90 Days

Method : OECD Test Guideline 408

## **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:**

#### **Ethylbenzene:**

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.

## Xylene:

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.



# **Dichlofenthion Formulation**

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#### **Experience with human exposure**

#### **Components:**

Dichlofenthion (ISO):

Skin contact : Symptoms: irritating, central nervous system effects, sweating

Remarks: Can be absorbed through skin. May cause sensitisation by skin contact.

Eye contact : Symptoms: constriction of pupils, central nervous system ef-

fects

Ingestion : Symptoms: Nausea, Diarrhoea, Vomiting, sweating, Lachry-

mation, constriction of pupils, Central nervous system depression, Gastrointestinal disturbance, bronchospasm, central

nervous system effects, Oedema

#### **Section 12: Ecological information**

#### **Toxicity**

#### **Components:**

Tar, wood:

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 28 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EC50 (Desmodesmus subspicatus (green algae)): 17 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

EC10 (Desmodesmus subspicatus (green algae)): 14 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Rosin:

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 1 - 10 mg/l

Exposure time: 96 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 203

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 911 mg/l

Exposure time: 48 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EL50 (Raphidocelis subcapitata (freshwater green alga)): >

1,000 mg/l

Exposure time: 72 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 201



# **Dichlofenthion Formulation**

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NOELR (Raphidocelis subcapitata (freshwater green alga)):

1,000 mg/l

Exposure time: 72 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (activated sludge): > 10,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Tar, coal:

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 250 mg/l

Exposure time: 96 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 203

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 2.8 mg/l

Exposure time: 48 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 202

Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

EL50 (Desmodesmus subspicatus (green algae)): 36 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

NOELR (Desmodesmus subspicatus (green algae)): 5 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

Ethylbenzene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): 3.6

mg/

Exposure time: 96 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 3.4

mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates (Chron-

NOEC (Ceriodaphnia dubia (water flea)): 0.96 mg/l

Exposure time: 7 d



# **Dichlofenthion Formulation**

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ic toxicity)

Toxicity to microorganisms EC50 (Nitrosomonas sp.): 96 mg/l

Exposure time: 24 h

Xylene:

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)): 13.5 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l

Exposure time: 24 h

Method: OECD Test Guideline 202

Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

EC50 (Skeletonema costatum (marine diatom)): 10 mg/l

Exposure time: 72 h

Toxicity to fish (Chronic tox-

icity)

NOEC (Danio rerio (zebra fish)): > 0.1 - < 1 mg/l

Exposure time: 35 d

Method: OECD Test Guideline 210

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

EL10 (Daphnia magna (Water flea)): > 1 - 10 mg/l

Exposure time: 21 d

Method: OECD Test Guideline 211

Remarks: Based on data from similar materials

NOEC: > 100 mg/l Toxicity to microorganisms

Exposure time: 3 h

Method: OECD Test Guideline 209

Remarks: Based on data from similar materials

Dichlofenthion (ISO):

Toxicity to fish LC50 (No species specified): 0.64 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

LC50 (Lepomis macrochirus (Bluegill sunfish)): 1.23 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.0011 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

M-Factor (Acute aquatic tox- :

M-Factor (Chronic aquatic

toxicity)

100 100

Phenol:

Toxicity to fish LC50 (Pimephales promelas (fathead minnow)): 24.9 mg/l



# **Dichlofenthion Formulation**

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Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 3.1 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50 (Selenastrum capricornutum (green algae)): 61.1 mg/l

Exposure time: 96 h

Toxicity to fish (Chronic tox-

icity)

NOEC: 0.077 mg/l Exposure time: 60 d

Toxicity to daphnia and other : aquatic invertebrates (Chron-

NOEC (Daphnia magna (Water flea)): 10 mg/l

Exposure time: 16 d

ic toxicity)

Toxicity to microorganisms IC50 (Nitrosomonas sp.): 21 mg/l

Exposure time: 24 h

m-Cresol:

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)): 8.6 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia pulex (Water flea)): > 99.5 mg/l

Exposure time: 48 h

Toxicity to fish (Chronic tox-

icity)

NOEC (Pimephales promelas (fathead minnow)): 1.35 mg/l

Exposure time: 32 d

Remarks: Based on data from similar materials

Toxicity to daphnia and other

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 1 mg/l

Exposure time: 21 d

Remarks: Based on data from similar materials

p-Cresol:

LC50 (Oncorhynchus mykiss (rainbow trout)): 7.4 mg/l Toxicity to fish

Exposure time: 96 h

Toxicity to daphnia and other

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 7.7 mg/l

Exposure time: 48 h Method: DIN 38412

Toxicity to algae/aquatic

plants

EC50 (Desmodesmus subspicatus (green algae)): 7.8 mg/l

Exposure time: 48 h

EC10 (Desmodesmus subspicatus (green algae)): 2.3 mg/l

Exposure time: 48 h

Toxicity to fish (Chronic tox-

icity)

NOEC (Pimephales promelas (fathead minnow)): 1.35 mg/l

Exposure time: 32 d

Toxicity to daphnia and other

aquatic invertebrates (Chron-

NOEC (Daphnia magna (Water flea)): 1 mg/l

Exposure time: 21 d



## **Dichlofenthion Formulation**

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ic toxicity)

Toxicity to microorganisms : IC50 (Nitrosomonas sp.): 260 mg/l

Exposure time: 24 h

Persistence and degradability

**Components:** 

Tar, wood:

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 47 % Exposure time: 28 d

Method: OECD Test Guideline 301B

Rosin:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 71 % Exposure time: 28 d

Method: OECD Test Guideline 301D

Ethylbenzene:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 70 - 80 % Exposure time: 28 d

Xylene:

Biodegradability : Result: Readily biodegradable.

Biodegradation: > 70 % Exposure time: 28 d

Method: OECD Test Guideline 301F

Remarks: Based on data from similar materials

Phenol:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 62 % Exposure time: 10 d

Method: OECD Test Guideline 301C

m-Cresol:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 90 % Exposure time: 28 d

Method: OECD Test Guideline 301D

p-Cresol:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 100 %



# **Dichlofenthion Formulation**

Version 5.1

Revision Date: 28.09.2024

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Exposure time: 8 d

**Bioaccumulative potential** 

Components:

Tar, wood:

Partition coefficient: n-

octanol/water

: log Pow: 0.2 - 2.02

Rosin:

Partition coefficient: n-

octanol/water

log Pow: > 3 - 6.2

Method: OECD Test Guideline 117

Tar, coal:

Partition coefficient: n-

octanol/water

Remarks: No data available

Ethylbenzene:

Partition coefficient: n-

octanol/water

log Pow: 3.6

Xylene:

Partition coefficient: n-

octanol/water

log Pow: 3.16

Remarks: Calculation

Dichlofenthion (ISO):

Partition coefficient: n-

octanol/water

log Pow: 5.14

Phenol:

Bioaccumulation

Species: Fish

Bioconcentration factor (BCF): 17.5 Method: OECD Test Guideline 305

Partition coefficient: n-

octanol/water

log Pow: 1.47

m-Cresol:

Bioaccumulation

Species: Leuciscus idus (Golden orfe)

Bioconcentration factor (BCF): 17 - 20

Partition coefficient: n-

octanol/water

log Pow: 1.96

p-Cresol:

Bioaccumulation

Species: Leuciscus idus (Golden orfe)

Bioconcentration factor (BCF): 17 - 20

Remarks: Based on data from similar materials

Partition coefficient: n-

octanol/water

: log Pow: 1.94



## **Dichlofenthion Formulation**

Version SDS Number: Date of last issue: 06.04.2024 Revision Date: 5.1 28.09.2024 1552595-00017 Date of first issue: 14.04.2017

## Mobility in soil

No data available

#### Other adverse effects

No data available

#### Section 13: Disposal considerations

**Disposal methods** 

Waste from residues Do not dispose of waste into sewer.

Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

## **Section 14: Transport information**

## International Regulations

**UNRTDG** 

**UN** number UN 2920

UN proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S.

(Sodium hydroxide, Ethylbenzene)

Transport hazard class(es) 8 Subsidiary risk 3 Packing group Ш Labels 8 (3) Environmental hazards yes

IATA-DGR

UN 2920 UN/ID No.

UN proper shipping name Corrosive liquid, flammable, n.o.s.

(Sodium hydroxide, Ethylbenzene)

Transport hazard class(es) 8 Subsidiary risk 3 Packing group Ш

Labels Corrosive, Flammable Liquids

Packing instruction (cargo

aircraft)

Packing instruction (passen-

851

855

ger aircraft)

**IMDG-Code** 

**UN** number UN 2920

Proper shipping name CORROSIVE LIQUID. FLAMMABLE, N.O.S.

(Sodium hydroxide, Ethylbenzene, Dichlofenthion (ISO))

Transport hazard class(es) 8 Subsidiary risk 3 Ш Packing group



## **Dichlofenthion Formulation**

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Labels 8 (3) **EmS Code** F-E, S-C Marine pollutant yes

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

#### Special precautions for user

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

#### **Section 15: Regulatory information**

#### Safety, health and environmental regulations specific for the product in question

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and Environmental Protection and Management (Hazard-

ous Substances) Regulations

Phosphorus compounds used as pesticides (insecticides, acaricides, etc.)

Phenols

Fire Safety (Petroleum and Flammable Materials)

Regulations

Mixed Xylenes Isomers

**Xylenes** Ethylbenzene

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

**AICS** not determined

DSL not determined

**IECSC** not determined

#### **Section 16: Other information**

**Revision Date** 28.09.2024

**Further information** 

Sources of key data used to

compile the Safety Data

Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

Date format dd.mm.yyyy

Full text of other abbreviations

**ACGIH** USA. ACGIH Threshold Limit Values (TLV) ACGIH BEI ACGIH - Biological Exposure Indices (BEI) SG BTLV Singapore. Biological Threshold Limit Values



## **Dichlofenthion Formulation**

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SG OEL : Singapore. Workplace Safety and Health (General Provisions)

Regulations - First Schedule Permissible Exposure Limits of

Toxic Substances.

ACGIH / TWA : 8-hour, time-weighted average

ACGIH / C : Ceiling limit

SG OEL / PEL (long term) : Permissible Exposure Level (PEL) Long Term SG OEL / PEL (short term) : Permissible Exposure Level (PEL) Short Term

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk, IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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