SAFETY DATA SHEET

STEWARD® 150 EC

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.08.2025	50000122	Date of first issue: 06.08.2025

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

1.1 Product identifier

Product name STEWARD® 150 EC

Other means of identification

Product code 50000122

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

Use of the Substance/Mixture : Insecticide

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

1.3 Details of the supplier of the safety data sheet

Supplier Address

FMC Chemicals (Pty) Ltd
Company Registration No.: 1988/001451/07
West End Office Park, Building C
Cnr. West Ave & Hall Street
Centurion
0014
South Africa
E-mail address: SDS-Info@fmc.com

Distributor address:
Polachem Investments (Private) Limited
12 Connaught Road
Avondale, Harare, Zimbabwe

1.4 Emergency telephone

For leak, fire, spill or accident emergencies, call:
South Africa: 080-001-4676 (CHEMTREC)

Medical emergency:
DaTIS (Drug and Toxicology Information Service
+263 24 2933452 or
+263 24 2791631 - 11 extension 2172 (Business hours)
E-Mail: datis@medsch.uz.ac.zw, datis.zim23@gmail.com, datiszim@gmail.com

Griffon Poison Information Centre (24 hrs): +27-(0)-82-446-8946

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Skin irritation, Category 2	H315: Causes skin irritation.
Specific target organ toxicity - repeated exposure, Category 1	H372: Causes damage to organs through prolonged or repeated exposure.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal Word : DANGER

Hazard Statements :
H302 Harmful if swallowed.
H315 Causes skin irritation.
H372 Causes damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P314 Get medical advice/ attention if you feel unwell.
P391 Collect spillage.

Disposal:

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

Hazardous ingredients which must be listed on the label:
indoxacarb (ISO)
calcium dodecylbenzenesulphonate

Additional Labeling

EUH208 Contains indoxacarb (ISO). May produce an allergic reaction.

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)
Fatty acids, C6-10, Me esters	68937-83-7 273-094-6	Skin Irrit. 2; H315	>= 50 - < 70
indoxacarb (ISO)	173584-44-6 607-700-00-0	Acute Tox. 3; H301 Acute Tox. 4; H332 Skin Sens. 1B; H317 STOT RE 1; H372 (Heart, Nervous system, Blood) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 10 - < 20
calcium dodecylbenzenesulphonate	26264-06-2 247-557-8	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 4; H413	>= 3 - < 10
2-ethylhexan-1-ol	104-76-7 203-234-3	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system)	>= 1 - < 10

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 material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
Avoid inhalation, ingestion and contact with skin and eyes.
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off with soap and water.
If symptoms persist, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not induce vomiting without medical advice.
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Exposure may result in loss of coordination and tremors.
Exposure to skin may result in mild symptoms include itching, hives or rash, and skin redness. More severe symptoms include sneezing, itchy watery eyes, and difficulty breathing.

Risks : Harmful if swallowed.
Causes skin irritation.
Causes damage to organs through prolonged or repeated exposure.

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, CO2, water spray or regular foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	Do not spread spilled material with high-pressure water streams. 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	:	Fire may produce irritating, corrosive and/or toxic gases. Chlorinated compounds Fluorinated compounds Nitrogen oxides (NOx) Carbon oxides Hydrogen cyanide Sulfur oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	Firefighters should wear protective clothing and self-contained breathing apparatus.
Specific extinguishing methods	:	Remove undamaged containers from fire area if it is safe to do so. Use a water spray to cool fully closed containers.
Further information	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Evacuate personnel to safe areas. Do not touch or walk through the spilled material. If it can be safely done, stop the leak. Use personal protective equipment. Never return spills in original containers for re-use. Mark the contaminated area with signs and prevent access to unauthorized personnel.

Only qualified personnel equipped with suitable protective equipment may intervene.
For disposal considerations see section 13.

6.2 Environmental precautions

Environmental precautions : Prevent 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 : Never return spills in original containers for re-use.
Collect as much of the spill as possible with a suitable absorbent material.
Pick up and transfer to properly labeled containers.
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapors/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
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.

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 : Avoid contact with skin, eyes and clothing. Do not inhale aerosol. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep tightly closed in a dry, cool and well-ventilated place.
Observe label precautions. Keep container closed when not in use. Keep locked up or in an area accessible only to qualified or authorized persons. Keep in properly labeled containers.
No smoking. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions	:	The product is stable under normal conditions of warehouse storage. Protect from frost and extreme heat. Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading “POISON” is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.
Recommended storage temperature	:	> 0 °C
Further information on storage stability	:	Do not freeze.

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

8.2 Exposure controls

Personal protective equipment

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

mended, the end user must refer to the label and the instructions for use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Color	:	amber
Odor	:	Pungent Sweet Pear faint burn smell
Odor Threshold	:	No data available
pH	:	6.6 (20 - 25 °C) Concentration: 10 g/l 1 %
Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	69 °C Method: Regulation (EC) No. 440/2008, Annex, A.9
Evaporation rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	0.9494Method: OECD Test Guideline 109
Density	:	0.9494 g/cm3 Method: OECD Test Guideline 109
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	255 °C Method: EEC A.15
Decomposition temperature	:	Hazardous decomposition products formed under fire conditions.
Viscosity		
Viscosity, dynamic	:	5.6 mPa.s (25 °C)
Viscosity, kinematic	:	4.68 mm2/s (20 °C) 2.95 mm2/s (40 °C)
Explosive properties	:	Not explosiveMethod: Regulation (EC) No. 440/2008, Annex,

A.14

Oxidizing properties : Non-oxidizing

9.2 Other information

Flammability (liquids) : Not highly flammable, ignitable
Surface tension : 28.9 mN/m, OECD Test Guideline 115, (undiluted)
39.3 mN/m, OECD Test Guideline 115, (Aqueous solution)
Molecular weight : Not applicable
Particle size : No data available

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.

Vapors may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.
Heating of the product will produce harmful and irritant vapours.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents
Strong acids and strong bases

10.6 Hazardous decomposition products

Stable under recommended storage conditions.
No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : LD50 (Rat, female): 977 mg/kg
Method: OECD Test Guideline 425
Assessment: The component/mixture is moderately toxic after single ingestion.

LD50 (Rat, female): 976.8 mg/kg

Method: OECD Test Guideline 425
Symptoms: ataxia, hair loss, Breathing difficulties
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 402
Symptoms: Irritation, Reduced body weight
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: no mortality

Components:

Fatty acids, C6-10, Me esters:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

indoxacarb (ISO):

Acute inhalation toxicity : LC50 (Rat, female): 4.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: nasal discharge, lethargy
GLP: yes

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 402
Symptoms: Irritation
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity

calcium dodecylbenzenesulphonate:

Acute oral toxicity : LD50 (Rat, male and female): 1,300 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : Remarks: Not classified

Acute dermal toxicity : LD50 (Rat, male and female): > 2000 milligram per kilogram
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

2-ethylhexan-1-ol:

Acute oral toxicity	:	LD50 (Rat, male): 2,047 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 4.3 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rat, male and female): > 3,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Causes skin irritation.

Product:

Species	:	Rabbit
Assessment	:	Irritating to skin.
Method	:	OECD Test Guideline 404
Result	:	Skin irritation
Remarks	:	May cause skin irritation in susceptible persons.

Components:

Fatty acids, C6-10, Me esters:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation

indoxacarb (ISO):

Species	:	Rabbit
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 404
GLP	:	yes
Remarks	:	Information source: Internal study report

calcium dodecylbenzenesulphonate:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation

2-ethylhexan-1-ol:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation

Serious eye damage/eye irritation

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

Product:

Species	:	Rabbit
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 405
GLP	:	yes
Remarks	:	Vapors may cause irritation to the eyes, respiratory system and the skin.

Components:

Fatty acids, C6-10, Me esters:

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

indoxacarb (ISO):

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation
GLP	:	yes
Remarks	:	Information source: Internal study report

calcium dodecylbenzenesulphonate:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye
Remarks	:	Based on data from similar materials
Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye

2-ethylhexan-1-ol:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irritation to eyes, reversing within 21 days

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

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

Product:

Test Type	:	Maximization Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406

Result	:	Did not cause sensitization on laboratory animals.
GLP	:	yes

Components:

Fatty acids, C6-10, Me esters:

Routes of exposure	:	Skin contact
Species	:	Guinea pig
Result	:	Not a skin sensitizer.

indoxacarb (ISO):

Test Type	:	Local lymph node assay (LLNA)
Routes of exposure	:	Skin contact
Species	:	Mouse
Assessment	:	The product is a skin sensitizer, sub-category 1B.
Method	:	OECD Test Guideline 429
Result	:	May cause sensitization by skin contact.
GLP	:	yes

Test Type	:	Maximization Test
Species	:	Guinea pig
Assessment	:	The product is a skin sensitizer, sub-category 1B.
Method	:	OECD Test Guideline 406
Result	:	Causes sensitization.
GLP	:	yes

Remarks	:	Information source: Internal study report

calcium dodecylbenzenesulphonate:

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

Germ cell mutagenicity

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

Product:

Genotoxicity in vitro	:	Test Type: Ames test Method: OECD Test Guideline 471 Result: negative Test Type: Ames test Method: OECD Test Guideline 472 Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Method: OECD Test Guideline 474 Result: negative

Components:

Fatty acids, C6-10, Me esters:

Genotoxicity in vitro	:	Test Type: Ames test Result: negative
Germ cell mutagenicity- Assessment	:	In vitro tests did not show mutagenic effects

indoxacarb (ISO):

Genotoxicity in vitro	:	Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Method: OECD Test Guideline 474 Result: negative
Germ cell mutagenicity- Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

calcium dodecylbenzenesulphonate:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: chromosome aberration assay Species: Rat (male and female) Application Route: Oral Exposure time: 90 d Result: negative Remarks: Based on data from similar materials
Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

2-ethylhexan-1-ol:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative

Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Application Route: Intraperitoneal injection Result: negative

Carcinogenicity

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

Components:

indoxacarb (ISO):

Species	:	Rat, female
Application Route	:	Oral
Exposure time	:	24 m
	:	2.13 mg/kg bw/day
Result	:	negative
Species	:	Rat, male
Application Route	:	Oral
Exposure time	:	24 m
	:	2.4 mg/kg bw/day
Result	:	negative
Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

calcium dodecylbenzenesulphonate:

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	720 d
NOAEL	:	250 mg/kg body weight
Result	:	negative
Remarks	:	Based on data from similar materials
Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

2-ethylhexan-1-ol:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	24 month(s)
Result	:	negative

Reproductive toxicity

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

Components:

indoxacarb (ISO):

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female Dose: 0, 20, 60, 100 parts per million

General Toxicity Parent: NOEL: 20 ppm
Fertility: NOEL: 60 ppm
Early Embryonic Development: NOEL: 20 ppm
Symptoms: Reduced body weight, reduced food consumption
Target Organs: spleen

Effects on fetal development : Test Type: Developmental toxicity study
Species: Rabbit
Dose: 0, 250, 500, 1000 mg/kg bw/day
General Toxicity Maternal: NOEL: 500 mg/kg bw/day
Developmental Toxicity: NOEL: 500 mg/kg bw/day
Symptoms: Reduced body weight, Reduced fetal weight., Skeletal malformations.
Method: EPA OPP 83-3
GLP: yes

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.
Animal testing did not show any effects on fetal development.

calcium dodecylbenzenesulphonate:

Effects on fertility : Test Type: Fertility/early embryonic development
Species: Rat, male and female
Application Route: Ingestion
General Toxicity Parent: NOAEL: 400 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

Effects on fetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Ingestion
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Developmental Toxicity: NOAEL: 600 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

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

2-ethylhexan-1-ol:

Effects on fetal development : Test Type: Embryo-fetal development
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 414
Result: negative

STOT-single exposure

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

Components:

2-ethylhexan-1-ol:

Assessment : May cause respiratory irritation.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Components:

indoxacarb (ISO):

Target Organs	:	Blood, Nervous system, Heart
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

indoxacarb (ISO):

Species	:	Rat, female
NOAEL	:	1.7 mg/kg
LOAEL	:	4.1 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Method	:	OECD Test Guideline 408
GLP	:	yes
Target Organs	:	Blood
Symptoms	:	Reduced body weight, reduced food consumption

Species	:	Rat, male
NOAEL	:	3.2 mg/kg
LOAEL	:	6.6 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Method	:	OECD Test Guideline 408
GLP	:	yes
Symptoms	:	Reduced body weight, reduced food consumption

Species	:	Rat, female
NOAEL	:	0.685 mg/kg, 10 ppm
LOAEL	:	3.3 mg/kg, 50 ppm
Application Route	:	Oral
Exposure time	:	90 d
Dose	:	0, 10, 50, 100 ppm
Method	:	EPA OPP 82-7
GLP	:	yes
Symptoms	:	Fatality, reduced food consumption, Reduced body weight
Remarks	:	No neurotoxicity detected.

Species	:	Rat, male
NOAEL	:	0.569 mg/kg, 10 ppm
LOAEL	:	5.62 mg/kg, 100 ppm
Application Route	:	Oral
Exposure time	:	90 d
Dose	:	0, 10, 100, 200 ppm
Method	:	EPA OPP 82-7

GLP	:	yes
Symptoms	:	Fatality, reduced food consumption, Reduced body weight
Remarks	:	No neurotoxicity detected.

Species	:	Dog, male and female
NOEL	:	1.1 - 1.3 mg/kg
LOAEL	:	2.3 - 2.4 mg/kg
Application Route	:	Oral - feed
Exposure time	:	12 m
Method	:	OECD Test Guideline 452
GLP	:	yes
Target Organs	:	Blood
Symptoms	:	reduced food consumption, Reduced body weight

calcium dodecylbenzenesulphonate:

Species	:	Rat, male and female
NOAEL	:	85 mg/kg
LOAEL	:	145 mg/kg
Application Route	:	Oral
Exposure time	:	9 Months
Remarks	:	Based on data from similar materials

Species	:	Rat, male
LOAEL	:	286 mg/kg
Application Route	:	Skin contact
Exposure time	:	15 Days
Remarks	:	Based on data from similar materials

Species	:	Rat, male and female
NOAEL	:	100 mg/kg bw/day
LOAEL	:	200 mg/kg bw/day
Application Route	:	Oral - gavage
Exposure time	:	28 - 54 Days
Method	:	OECD Test Guideline 422
Remarks	:	Based on data from similar materials

2-ethylhexan-1-ol:

Species	:	Rat
	:	250 mg/kg
Application Route	:	Oral
Exposure time	:	13 Weeks
Method	:	OECD Test Guideline 408

Aspiration toxicity

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

Neurological effects

Product:

Remarks	:	Causes neurotoxicity following acute and prolonged exposure

Components:

indoxacarb (ISO):

Remarks : Neurotoxity observed in animals studies

Further information

Product:

Remarks : No data available

Components:

indoxacarb (ISO):

Remarks : Acute effects on nervous system: drowsiness, tremors, paralysis. Chronic effects include cyanosis

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7.0 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.67 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

EC50 (Daphnia magna (Water flea)): 0.256 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 16 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

EbC50 (Pseudokirchneriella subcapitata (green algae)): 12.5 mg/l
Exposure time: 72 h
Test Type: static test

Method: OECD Test Guideline 201
GLP: yes

Toxicity to soil dwelling organisms : LD50: 921 mg/kg
Exposure time: 14 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207

Method: OECD Test Guideline 216
Remarks: No significant adverse effect on Nitrogen mineralization.

Method: OECD Test Guideline 217
Remarks: No significant adverse effect on Carbon mineralization.

Toxicity to terrestrial organisms : LD50: 0.08 µg/bee
Exposure time: 48 h
End point: Acute contact toxicity
Species: Apis mellifera (bees)

LD50: 0.11 µg/bee
Exposure time: 48 h
End point: Acute oral toxicity
Species: Apis mellifera (bees)

LD50: 593 mg/kg
Species: Colinus virginianus (Bobwhite quail)
Method: EPA OPP 71-1

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Components:

Fatty acids, C6-10, Me esters:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 95 mg/l
Exposure time: 48 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Gammarus fasciatus (freshwater shrimp)): 14.7 mg/l
Remarks: Based on data from similar materials

indoxacarb (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.65 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203
GLP: yes
Remarks: Information source: Internal study report

LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.90 mg/l

Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 0.17 mg/l
Exposure time: 48 h
Test Type: flow-through test
Method: OECD Test Guideline 202
GLP: yes

EC50 (Americamysis bahia (mysid shrimp)): 0.0543 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: US EPA Test Guideline OPP 72-3
GLP: yes
Remarks: Information source: Internal study report

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (algae)): > 0.0793 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201
GLP: yes

EC50 (Lemna gibba (duckweed)): > 84.3 mg/l
Exposure time: 14 d

EC50 (Lemna gibba (duckweed)): > 84.3 mg/l
End point: Biomass
Exposure time: 14 d
Method: US EPA Test Guideline OPP 122-2 & 123-2
GLP: yes
Remarks: Information source: Internal study report

(Pseudokirchneriella subcapitata (green algae)): Method: Directive 67/548/EEC, Annex V, C.3.
GLP: yes
Remarks: There were no detectable inhibitory effects on the cell density, growth, and growth rate of Pseudokirchneriella subcapitata after 72 or 120 hours exposure at the solubility limit in the test medium.
Information source: Internal study report

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC: 0.0675 mg/l
Exposure time: 28 d
Species: Pimephales promelas (fathead minnow)
Test Type: Early Life-Stage
Method: OECD Test Guideline 210
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.0351 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: Static renewal test Method: OECD Test Guideline 211 GLP: yes
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to soil dwelling organisms	:	LC50: > 1,000 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207 GLP:yes LC50: > 1,250 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207 GLP:yes Remarks: Information source: Internal study report Method: OECD Test Guideline 216 Remarks: No significant adverse effect on Nitrogen mineralization. Method: OECD Test Guideline 217 Remarks: No significant adverse effect on Carbon mineralization.
Toxicity to terrestrial organisms	:	NOEL: 0.048 µg/bee Exposure time: 48 h End point: Acute contact toxicity Species: Apis mellifera (bees) Method: OECD Test Guideline 214 NOEL: 0.163 µg/bee Exposure time: 48 h End point: Acute oral toxicity Species: Apis mellifera (bees) Method: OECD Test Guideline 213 LD50: 0.068 µg/bee Exposure time: 48 h End point: Acute contact toxicity Species: Apis mellifera (bees) Method: OECD Test Guideline 214 LD50: 0.232 µg/bee Exposure time: 48 h End point: Acute oral toxicity

Species: Apis mellifera (bees)
Method: OECD Test Guideline 213

LD50: 98 mg/kg
Species: Colinus virginianus (Bobwhite quail)
Method: US EPA Test Guideline OPP 71-1
GLP:yes

NOEC: 720 ppm
Exposure time: 147 d
End point: Reproduction Test
Species: Anas platyrhynchos (Mallard duck)
Method: OECD Test Guideline 206
GLP:yes

NOEC: 144 ppm
Exposure time: 147 d
End point: Reproduction Test
Species: Colinus virginianus (Bobwhite quail)
Method: OECD Test Guideline 206

LC50: > 5,620 ppm
Exposure time: 5 d
Species: Anas platyrhynchos (Mallard duck)
Method: US EPA Test Guideline OPP 71-2
Remarks: Dietary

NOEC: 562 ppm
Exposure time: 5 d
Species: Anas platyrhynchos (Mallard duck)
Method: US EPA Test Guideline OPP 71-2
Remarks: Dietary

LC50: 808 ppm
Exposure time: 5 d
Species: Colinus virginianus (Bobwhite quail)
Method: US EPA Test Guideline OPP 71-2
Remarks: Dietary

NOEC: 316 ppm
Exposure time: 5 d
Species: Colinus virginianus (Bobwhite quail)
Method: US EPA Test Guideline OPP 71-1
Remarks: Dietary

calcium dodecylbenzenesulphonate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 10 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

LC50 (Pimephales promelas (fathead minnow)): 4.6 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)): 3.5 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	NOEC (Pseudokirchneriella subcapitata (green algae)): 7.9 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials EC50 (Pseudokirchneriella subcapitata (green algae)): 65.4 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	EC50 (activated sludge): 500 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 1.65 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Remarks: Based on data from similar materials NOEC: 1.18 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Remarks: Based on data from similar materials
Toxicity to soil dwelling organisms	:	LC50: 1,000 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207
Toxicity to terrestrial organisms	:	LD50: 1,356 mg/kg Exposure time: 14 d Species: Colinus virginianus (Bobwhite quail) Method: OECD Test Guideline 223

Ecotoxicology Assessment

Chronic aquatic toxicity	:	May cause long lasting harmful effects to aquatic life.

2-ethylhexan-1-ol:

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): 17.1 - 28.2 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 39 mg/l Exposure time: 48 h

Toxicity to algae/aquatic plants	:	EC10 (Desmodesmus subspicatus (green algae)): 3.2 mg/l Exposure time: 72 h EC50 (Desmodesmus subspicatus (green algae)): 11.5 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	EC50 (Anabaena flos-aquae (cyanobacterium)): 16.6 mg/l Exposure time: 72 h

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: No data is available on the product itself. Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:

Fatty acids, C6-10, Me esters:

Biodegradability	:	Result: Readily biodegradable.

indoxacarb (ISO):

Biodegradability	:	Result: Not readily biodegradable.

calcium dodecylbenzenesulphonate:

Biodegradability	:	Result: Readily biodegradable. Method: OECD Test Guideline 301E

2-ethylhexan-1-ol:

Biodegradability	:	Result: Readily biodegradable.

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: No data is available on the product itself. Remarks: No data available

Components:

indoxacarb (ISO):

Bioaccumulation	:	Bioconcentration factor (BCF): 950 Remarks: Bioaccumulation is unlikely.
Partition coefficient: n-octanol/water	:	log Pow: 4.52 (20 °C) Method: OECD Test Guideline 107 GLP: yes

calcium dodecylbenzenesulphonate:

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): 70.79 Method: QSAR
Partition coefficient: n-octanol/water	:	log Pow: 4.77 (25 °C)

2-ethylhexan-1-ol:

Partition coefficient: n-octanol/water	:	log Pow: 2.9 (25 °C)

12.4 Mobility in soil

Product:

Distribution among environmental compartments	:	Remarks: No data is available on the product itself.

Components:

indoxacarb (ISO):

Distribution among environmental compartments	:	Remarks: immobile Kd: 46 - 150
Stability 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.
Additional ecological information	:	See product label for additional application instructions relating to environmental precautions. No other ecological effects to be specially mentioned.

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

Components:

indoxacarb (ISO):

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

SECTION 14: Transport information

14.1 UN number

UNRTDG : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

UNRTDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Indoxacarb)
(Indoxacarb)

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

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

14.3 Transport hazard class(es)

		Class	Subsidiary risks
UNRTDG	:	9	
IMDG	:	9	
IATA	:	9	

14.4 Packing group

UNRTDG

Packing group	:	III
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

UNRTDG

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes

IATA (Passenger)

Environmentally hazardous	:	yes

IATA (Cargo)

Environmentally hazardous	:	yes

14.6 Special precautions for user

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

14.7 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 ingredients 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	:	This product contains the following components that are not on the Canadian DSL nor NDSL. indoxacarb (ISO) Fatty acids, C6-10, Me esters
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Full text of H-Statements

H301	:	Toxic if swallowed.
H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.

H372	:	Causes damage to organs through prolonged or repeated exposure.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H413	:	May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitization
STOT RE	:	Specific target organ toxicity - repeated exposure
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; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information :

Classification of the mixture:		**Classification procedure:**
Acute Tox. 4	H302	Based on product data or assessment
Skin Irrit. 2	H315	Based on product data or assessment
STOT RE 1	H372	Calculation method
Aquatic Chronic 2	H411	Calculation method

Disclaimer

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. You can contact FMC Corporation to insure that this document is the most current available from FMC Corporation. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. The user is responsible for determining whether the product is fit for a particular purpose and suitable for the user's conditions and methods of use. Since the conditions and methods of use are beyond the control of FMC Corporation, FMC Corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

Prepared by

FMC Corporation

ZW / EN