

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

SECTION 1. IDENTIFICATION

Product name : Enilconazole Liquid Formulation
Other means of identification : No data available

Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc
Address : 126 E. Lincoln Avenue
Rahway, New Jersey U.S.A. 07065
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product
Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids : Category 3
Acute toxicity (Oral) : Category 3
Acute toxicity (Inhalation) : Category 4
Eye irritation : Category 2A
Carcinogenicity : Category 2
Specific target organ toxicity : Category 2 (Liver)
- repeated exposure

GHS label elements

Hazard pictograms :    

Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.
H301 Toxic if swallowed.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.
H373 May cause damage to organs (Liver) through prolonged or repeated exposure.

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version 6.0 Revision Date: 09/30/2023 SDS Number: 906752-00019 Date of last issue: 04/04/2023
Date of first issue: 09/22/2016

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.
P260 Do not breathe mist or vapors.
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.
P280 Wear protective gloves, protective clothing, eye protection and face protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical attention.
P337 + P313 If eye irritation persists: Get medical attention.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards

Vapors may form explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Sodium bis(2-ethylhex-yl)sulfosuccinate	docusate sodium	577-11-7	$\geq 30 - < 60$ *
Enilconazole	Imazalil	35554-44-0	$\geq 10 - < 30$ *
Benzyl alcohol	Benzenemethanol	100-51-6	$\geq 5 - < 10$ *
Ethanol#	Ethyl alcohol	64-17-5	$\geq 1 - < 5$

Voluntarily-disclosed substance

* Actual concentration or concentration range is withheld as a trade secret

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

SECTION 4. FIRST AID MEASURES

- | | |
|---|---|
| General advice | : In the case of accident or if you feel unwell, seek medical advice 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. |
| In case of skin contact | : In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
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. |
| If swallowed | : If swallowed, DO NOT induce vomiting.
Call a physician or poison control center immediately.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : Gastrointestinal disturbance
Toxic if swallowed.
Causes serious eye irritation.
Harmful if inhaled.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure. |
| Protection of first-aiders | : 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). |
| Notes to physician | : Treat symptomatically and supportively. |

SECTION 5. FIRE-FIGHTING MEASURES

- | | |
|---------------------------------------|---|
| Suitable extinguishing media | : Water spray
Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical |
| Unsuitable extinguishing media | : High volume water jet |
| Specific hazards during fire fighting | : Do not use a solid water stream as it may scatter and spread fire.
Flash back possible over considerable distance.
Vapors may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health. |
| Hazardous combustion prod- | : Carbon oxides |

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version 6.0	Revision Date: 09/30/2023	SDS Number: 906752-00019	Date of last issue: 04/04/2023 Date of first issue: 09/22/2016
----------------	------------------------------	-----------------------------	---

ucts	Sulfur oxides Metal oxides
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances 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.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
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	: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapors/mists with a water spray jet. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked 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

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 equipment.
Advice on safe handling	: Do not breathe mist or vapors.

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version 6.0 Revision Date: 09/30/2023 SDS Number: 906752-00019 Date of last issue: 04/04/2023
Date of first issue: 09/22/2016

Do not swallow.
Do not get in eyes.
Avoid prolonged or repeated contact with skin.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Non-sparking tools should be used.
Keep container tightly closed.
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.

Conditions for safe storage : Keep in properly labeled 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:
Strong oxidizing agents
Self-reactive substances and mixtures
Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures which in contact with water emit flammable gases
Explosives
Gases
Very acutely toxic substances and mixtures

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Enilconazole	35554-44-0	TWA	0.3 mg/m ³ (OEB 2)	Internal
Further information: Skin				
Ethanol	64-17-5	TWA	1,000 ppm 1,880 mg/m ³	CA AB OEL
		STEL	1,000 ppm	CA BC OEL
		STEV	1,000 ppm	CA QC OEL
		STEL	1,000 ppm	ACGIH

Engineering measures : Use appropriate engineering controls and manufacturing

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

technologies to control airborne concentrations (e.g., drip-less 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.

Laboratory operations do not require special containment.

Use explosion-proof electrical, ventilating and lighting equipment.

Personal protective equipment

- | | | |
|--------------------------|---|--|
| Respiratory protection | : | If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. |
| Filter type | : | Combined particulates and organic vapor type |
| Hand protection | : | |
| Material | : | Chemical-resistant gloves |
| Remarks | : | Take note that the product is flammable, which may impact the selection of hand protection. |
| Eye 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 and body protection | : | Work uniform or laboratory coat. |
| 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.
Wash contaminated clothing before re-use.
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- | | | |
|-----------------------------------|---|-------------------|
| Appearance | : | liquid |
| Color | : | light yellow |
| Odor | : | musty |
| Odor Threshold | : | No data available |
| pH | : | 9.5 |
| Melting point/freezing point | : | No data available |
| Initial boiling point and boiling | : | No data available |

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

range

Flash point : 45 °C

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Not applicable

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 : 1.094

Solubility(ies)

Water solubility : soluble

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

Autoignition 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.

Molecular weight : No data available

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Flammable liquid and vapor.
Vapors may form explosive mixture with air.
Can react with strong oxidizing agents.

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents Acids
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Toxic if swallowed.
Harmful if inhaled.

Product:

Acute oral toxicity	:	LD50 (Rat): 192 - 309 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 3.1 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 900 mg/kg

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

Acute oral toxicity	:	LD50 (Rat): 3,080 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg

Enilconazole:

Acute oral toxicity	:	LD50 (Rat): 227 mg/kg Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI LD50 (Mouse): 390 - 620 mg/kg LD50 (Dog): > 640 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 1.84 - 2.88 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI
Acute dermal toxicity	:	LD50 (Rat): 4,200 - 4,800 mg/kg LD50 (Rabbit): 4,200 mg/kg

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Acute toxicity (other routes of administration) : LD50 (Rat): 155 mg/kg
Application Route: Intraperitoneal

Benzyl alcohol:

Acute oral toxicity : LD50 (Rat): 1,620 mg/kg
Acute inhalation toxicity : LC50 (Rat): > 4.178 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Ethanol:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401
Acute inhalation toxicity : LC50 (Rat): 124.7 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Result : Mild skin irritation

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

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

Enilconazole:

Species : Rabbit
Result : Mild skin irritation

Benzyl alcohol:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Ethanol:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Species	:	Rabbit
Result	:	Moderate eye irritation

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

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

Enilconazole:

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Remarks	:	Based on harmonised classification in EU regulation 1272/2008, Annex VI

Species	:	Rabbit
Result	:	Moderate eye irritation
Remarks	:	Based on harmonised classification in EU regulation 1272/2008, Annex VI

Benzyl alcohol:

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

Ethanol:

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

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Species	:	Guinea pig
Result	:	Not a skin sensitizer.

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

Test Type	: Human repeat insult patch test (HRIPT)
Routes of exposure	: Skin contact
Species	: Humans
Result	: negative

Enilconazole:

Test Type	: Maximization Test
Routes of exposure	: Dermal
Species	: Guinea pig
Result	: equivocal

Routes of exposure	: Dermal
Species	: Humans
Result	: Not a skin sensitizer.

Benzyl alcohol:

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

Ethanol:

Test Type	: Local lymph node assay (LLNA)
Routes of exposure	: Skin contact
Species	: Mouse
Result	: negative

Germ cell mutagenicity

Not classified based on available information.

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
-----------------------	---

	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: equivocal
--	--

	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Remarks: Based on data from similar materials
--	---

Enilconazole:

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative Test Type: Chromosomal aberration Test system: Human lymphocytes Result: negative Test Type: gene mutation test Test system: Chinese hamster fibroblasts Result: negative Test Type: unscheduled DNA synthesis assay Test system: rat hepatocytes Result: negative
Genotoxicity in vivo	: Test Type: Micronucleus test Species: Rat Application Route: Oral Result: negative Test Type: Micronucleus test Species: Mouse Application Route: Oral Result: negative Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Mouse Result: negative

Benzyl alcohol:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Result: negative

Ethanol:

Genotoxicity in vitro	: Test Type: In vitro mammalian cell gene mutation test Result: negative Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	: Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Mouse Application Route: Ingestion Result: equivocal

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Carcinogenicity

Suspected of causing cancer.

Components:

Enilconazole:

Species	: Rat
Application Route	: Oral
Exposure time	: 2 Years
NOAEL	: 40 mg/kg body weight
Result	: negative

Species	: Mouse
Application Route	: Oral
Exposure time	: 2 Years
LOAEL	: 33 mg/kg body weight
Result	: positive
Target Organs	: Liver

Species	: Mouse
Application Route	: oral (feed)
Exposure time	: 23 Months
NOAEL	: 8 mg/kg body weight
LOAEL	: 105 mg/kg body weight
Result	: positive
Target Organs	: Liver
Remarks	: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Carcinogenicity - Assessment	: Limited evidence of carcinogenicity in animal studies
------------------------------	---

Benzyl alcohol:

Species	: Mouse
Application Route	: Ingestion
Exposure time	: 103 weeks
Method	: OECD Test Guideline 451
Result	: negative

Reproductive toxicity

Not classified based on available information.

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

Effects on fertility	: Test Type: Three-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
Effects on fetal development	: Test Type: Embryo-fetal development Species: Rat Application Route: Ingestion Result: negative

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

II

Enilconazole:

Effects on fertility : Test Type: Multi-generation study
Species: Rat
Application Route: Oral
General Toxicity Parent: NOAEL: 20 mg/kg body weight
Result: Maternal toxicity observed., Embryotoxic effects and adverse effects on the offspring were detected.
Remarks: Not classified due to data which are conclusive although insufficient for classification.

Effects on fetal development : Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: LOAEL: 80 mg/kg body weight
Result: Reduced fetal weight., Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses
Remarks: The effects were seen only at maternally toxic doses.

Test Type: Development
Species: Rabbit
Application Route: Oral
Developmental Toxicity: LOAEL: 10 mg/kg body weight
Result: Maternal toxicity observed., No teratogenic effects., Postimplantation loss.
Remarks: The effects were seen only at maternally toxic doses.

Benzyl alcohol:

Effects on fertility : Test Type: Fertility/early embryonic development
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development
Species: Mouse
Application Route: Ingestion
Result: negative

Ethanol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Mouse
Application Route: Ingestion
Result: negative

STOT-single exposure

Not classified based on available information.

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

STOT-repeated exposure

May cause damage to organs (Liver) through prolonged or repeated exposure.

Components:

Enilconazole:

Target Organs	: Liver
Assessment	: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Product:

Species	: Rabbit
NOAEL	: 1 mg/kg
Application Route	: Dermal
Exposure time	: 21 d
Symptoms	: No adverse effects.

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

Species	: Rat
NOAEL	: 750 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days

Enilconazole:

Species	: Rat
NOAEL	: 5 mg/kg
LOAEL	: 20 mg/kg
Application Route	: Oral
Exposure time	: 3 - 24 Months
Target Organs	: Liver
Symptoms	: decrease in appetite

Species	: Dog
NOAEL	: 2.5 mg/kg
LOAEL	: 20 mg/kg
Application Route	: Oral
Exposure time	: 12 Months
Symptoms	: Salivation, Vomiting

Species	: Mouse
NOAEL	: 12 mg/kg
LOAEL	: 140 mg/kg
Application Route	: Oral
Exposure time	: 3 Months
Target Organs	: Liver

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Benzyl alcohol:

Species	: Rat
NOAEL	: 1.072 mg/l
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 28 Days
Method	: OECD Test Guideline 412

Ethanol:

Species	: Rat
NOAEL	: 1,280 mg/kg
LOAEL	: 3,156 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days

Aspiration toxicity

Not classified based on available information.

Experience with human exposure

Product:

Inhalation	: Remarks: May cause respiratory tract irritation.
Skin contact	: Remarks: May irritate skin.
Eye contact	: Remarks: May irritate eyes.
Ingestion	: Symptoms: Gastrointestinal disturbance, central nervous system effects

Components:

Enilconazole:

Skin contact	: Symptoms: pruritis, skin rash, Skin irritation
Eye contact	: Symptoms: Eye irritation
Ingestion	: Symptoms: Nausea

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

Toxicity to fish	: LC50 (Danio rerio (zebra fish)): 49 mg/l Exposure time: 96 h Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 6.6 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Desmodesmus subspicatus (green algae)): 82.5 mg/l Exposure time: 72 h EC10 (Desmodesmus subspicatus (green algae)): 22 mg/l Exposure time: 72 h

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 9 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50 (Pseudomonas putida): 164 mg/l
Exposure time: 16 h

Enilconazole:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.48 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Lepomis macrochirus (Bluegill sunfish)): 3.99 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3.54 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 1.2 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.457 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): < 0.007 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Benzyl alcohol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 460 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 230 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 310 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 51 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Ethanol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia (water flea)): > 1,000 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Chlorella vulgaris (Fresh water algae)): 275 mg/l
Exposure time: 72 h

EC10 (Chlorella vulgaris (Fresh water algae)): 11.5 mg/l
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 9.6 mg/l
Exposure time: 9 d

Toxicity to microorganisms : EC50 (Pseudomonas putida): 6,500 mg/l
Exposure time: 16 h

Persistence and degradability

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 91.2 %
Exposure time: 28 d

Enilconazole:

Biodegradability : Result: not rapidly degradable
Biodegradation: 50 %
Exposure time: 166 d

Benzyl alcohol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 92 - 96 %
Exposure time: 14 d

Ethanol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 84 %
Exposure time: 20 d

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Bioaccumulative potential

Components:

Sodium bis(2-ethylhexyl)sulfosuccinate:

Partition coefficient: n-octanol/water	:	log Pow: 1.998
	:	Remarks: Calculation

Enilconazole:

Partition coefficient: n-octanol/water	:	log Pow: 3.82
--	---	---------------

Benzyl alcohol:

Partition coefficient: n-octanol/water	:	log Pow: 1.05
--	---	---------------

Ethanol:

Partition coefficient: n-octanol/water	:	log Pow: -0.35
--	---	----------------

Mobility in soil

Components:

Enilconazole:

Distribution among environmental compartments	:	log Koc: 3.82
---	---	---------------

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 handling 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 1992
Proper shipping name	:	FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethanol, 1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole)

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

Class : 3
Subsidiary risk : 6.1
Packing group : III
Labels : 3 (6.1)
Environmentally hazardous : yes

IATA-DGR

UN/ID No. : UN 1992
Proper shipping name : Flammable liquid, toxic, n.o.s.
(Ethanol, Enilconazole)

Class : 3
Subsidiary risk : 6.1
Packing group : III
Labels : Flammable Liquids, Toxic
Packing instruction (cargo aircraft) : 366
Packing instruction (passenger aircraft) : 355

IMDG-Code

UN number : UN 1992
Proper shipping name : FLAMMABLE LIQUID, TOXIC, N.O.S.
(Ethanol, Enilconazole)

Class : 3
Subsidiary risk : 6.1
Packing group : III
Labels : 3 (6.1)
EmS Code : F-E, S-D
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

TDG

UN number : UN 1992
Proper shipping name : FLAMMABLE LIQUID, TOXIC, N.O.S.
(Ethanol, Enilconazole)

Class : 3
Subsidiary risk : 6.1
Packing group : III
Labels : 3 (6.1)
ERG Code : 131

Marine pollutant : yes(Enilconazole)
Remarks : Display "inhalation hazard" mark on package in accordance with TDG 4.23.

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.

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

SECTION 15. REGULATORY INFORMATION

The ingredients of this product are reported in the following inventories:

AICS	:	not determined
DSL	:	not determined
IECSC	:	not determined

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / STEL	:	Short-term exposure limit
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA BC OEL / STEL	:	short-term exposure limit
CA QC OEL / STEV	:	Short-term exposure value

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 - Transporta-

SAFETY DATA SHEET

according to the Hazardous Products Regulations



Enilconazole Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04/04/2023
6.0	09/30/2023	906752-00019	Date of first issue: 09/22/2016

tion of Dangerous Goods; TECL - 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

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 09/30/2023
Date format : mm/dd/yyyy

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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.

CA / Z8