

Version Revision Date: SDS Number: This version replaces all previous versions.

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DEMAND CS 2.5

Design code : A12689G

Manufacturer or supplier's details

Company : Syngenta Crop Protection AG

Address : Rosentalstrasse 67, Postfach

CH-4002 Basel Switzerland

Telephone : +41 61 323 11 11

Emergency telephone number: +44 1484 538444

Telefax : +41 61 323 12 12

Recommended use of the chemical and restrictions on use

Recommended use : Insecticide

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Inhalation) : Category 4

Short-term (acute) aquatic

hazard

Category 1

Long-term (chronic) aquatic

hazard

Category 1

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H332 Harmful if inhaled.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P261 Avoid breathing mist or vapours.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

Response:



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P304 + P340 + P317 IF INHALED: Remove person to fresh air

and keep comfortable for breathing. Get medical help.

P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

Other hazards which do not result in classification

May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	. Concentration (%	
		w/w)	
lambda-cyhalothrin (ISO)	91465-08-6	>= 1 - < 2,5	
Hydrocarbons, C9, Aromatics	128601-23-0	>= 1 - < 2,5	
ammonia	1336-21-6	>= 0,1 - < 0,25	

4. FIRST AID MEASURES

General advice : Have the product container, label or Safety Data Sheet with

you when calling the emergency number, a poison control

center or physician, or going for treatment.

If inhaled : Move the victim to fresh air.

If breathing is irregular or stopped, administer artificial respira-

tion.

Keep patient warm and at rest.

Call a physician or poison control centre immediately.

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

Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,

for at least 15 minutes. Remove contact lenses.

Immediate medical attention is required.

If swallowed : If swallowed, seek medical advice immediately and show this

container or label.

Do NOT induce vomiting.

Most important symptoms and effects, both acute and

delayed

Aspiration may cause pulmonary oedema and pneumonitis. Skin contact paresthesia effects (itching, tingling, burning or

numbness) are transient, lasting up to 24 hours.

Notes to physician : Do not induce vomiting: contains petroleum distillates and/or

aromatic solvents.

Treat symptomatically.

5. FIREFIGHTING MEASURES



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Suitable extinguishing media : Extinguishing media - small fires

Use water spray, alcohol-resistant foam, dry chemical or car-

bon dioxide.

Extinguishing media - large fires

Alcohol-resistant foam

or

Water spray

Unsuitable extinguishing

media

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

fire

Specific hazards during fire-

fighting

As the product contains combustible organic components, fire will produce dense black smoke containing hazardous prod-

ucts of combustion (see section 10).

Exposure to decomposition products may be a hazard to

health.

Specific extinguishing meth-

ods

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

courses.

Cool closed containers exposed to fire with water spray.

Special protective equipment

for firefighters

Wear full protective clothing and self-contained breathing ap-

paratus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- :

tive equipment and emer-

gency procedures

Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Prevent further leakage or spillage if safe to do so.

Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform

respective authorities.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local

/ national regulations (see section 13).
Clean contaminated surface thoroughly.

Clean with detergents. Avoid solvents.

Retain and dispose of contaminated wash water.

7. HANDLING AND STORAGE

Advice on safe handling : No special protective measures against fire required.

Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
For personal protection see section 8.

Conditions for safe storage : No special storage conditions required.

Keep containers tightly closed in a dry, cool and well-

ventilated place.

Keep out of the reach of children.

Keep away from food, drink and animal feedingstuffs.



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
lambda-cyhalothrin (ISO)	91465-08-6	TWA	0,04 mg/m3 (Skin)	Syngenta
Hydrocarbons, C9, Aromatics	128601-23-0	TWA	19 ppm 100 mg/m3	Supplier
ammonia	1336-21-6	TWA	25 ppm (Ammonia)	ACGIH
		STEL	35 ppm (Ammonia)	ACGIH

Engineering measures

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.

Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Respiratory protection : When workers are facing concentrations above the exposure

limit they must use appropriate certified respirators.

Suitable respiratory equipment: Respirator with a half face mask

The filter class for the respirator must be suitable for the max-

imum expected contaminant concentration

(gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-

contained breathing apparatus must be used.

Hand protection

Material : Nitrile rubber
Break through time : > 480 min
Glove thickness : 0,5 mm

Remarks : Wear protective gloves. The choice of an appropriate glove

does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for



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each case. Gloves should be discarded and replaced if there

is any indication of degradation or chemical breakthrough.

Eye protection : No special protective equipment required.

Skin and body protection : Choose body protection in relation to its type, to the concen-

tration and amount of dangerous substances, and to the spe-

cific work-place.

Remove and wash contaminated clothing before re-use.

Wear as appropriate: Impervious clothing

Protective measures : The use of technical measures should always have priority

over the use of personal protective equipment.

When selecting personal protective equipment, seek appro-

priate professional advice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : light beige to brown

Odour : No data available

Odour Threshold : No data available

pH : 4-8

Concentration: 1 %w/v

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : Method: Pensky-Martens closed cup

does not flash

Evaporation rate : No data available

Flammability (solid, gas) : No data available

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

Density : 1,03 g/cm3 (25 °C)

Solubility(ies)

Water solubility : No data available



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> Solubility in other solvents No data available

Partition coefficient: n-

octanol/water

No data available

Auto-ignition temperature 600 °C

Decomposition temperature No data available

Viscosity

Viscosity, dynamic 33 - 263 mPa.s (40 °C)

41 - 303 mPa.s (20 °C)

Viscosity, kinematic No data available

Explosive properties Not explosive

Not explosive

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

49,8 mN/m, %20 °C Surface tension

Particle size No data available

10. STABILITY AND REACTIVITY

Reactivity None reasonably foreseeable. Chemical stability Stable under normal conditions.

Possibility of hazardous reac-

No dangerous reaction known under conditions of normal use.

Conditions to avoid No decomposition if used as directed. None known.

Incompatible materials

Hazardous decomposition

products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of:

exposure

Ingestion Inhalation Skin contact Eye contact

Acute toxicity

Product:

LD50(Rat, male and female): > 5.000 mg/kg Acute oral toxicity

Remarks: Based on data from similar materials

Acute inhalation toxicity LC50(Rat, male and female): > 4,62 mg/l

Exposure time: 4 h



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Test atmosphere: dust/mist

Assessment: The substance/mixture is not toxic on inhalation

as defined by dangerous goods regulations. Remarks: Based on data from similar materials

Acute dermal toxicity : LD50(Rat, male and female): > 4.000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Remarks: Based on data from similar materials

Components:

lambda-cyhalothrin (ISO):

Acute oral toxicity : LD50 (Rat, female): 56 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): 0,06 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat, male): 632 mg/kg

Hydrocarbons, C9, Aromatics:

Acute oral toxicity : LD50 (Rat, female): 3.492 mg/kg

Skin corrosion/irritation

Product:

Species : Rabbit

Result : No skin irritation

Remarks : Based on data from similar materials

Components:

lambda-cyhalothrin (ISO):

Species : Rabbit

Result : No skin irritation

Hydrocarbons, C9, Aromatics:

Result : Repeated exposure may cause skin dryness or cracking.

Species : Rabbit

Result : Mild skin irritation

ammonia:

Result : Corrosive after 3 minutes to 1 hour of exposure



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Serious eye damage/eye irritation

Product:

Species : Rabbit

Result : No eye irritation

Remarks : Based on data from similar materials

Components:

lambda-cyhalothrin (ISO):

Species : Rabbit

Result : No eye irritation

Respiratory or skin sensitisation

Components:

lambda-cyhalothrin (ISO):

Test Type : Maximisation Test

Species : Guinea pig

Result : Does not cause skin sensitisation.

Test Type : Local lymph node assay (LLNA)

Species : Mouse

Result : Does not cause skin sensitisation.

Germ cell mutagenicity

Components:

lambda-cyhalothrin (ISO):

Germ cell mutagenicity -

Assessment

: Animal testing did not show any mutagenic effects.

Carcinogenicity

Components:

lambda-cyhalothrin (ISO):

Carcinogenicity - Assess-

ment

Weight of evidence does not support classification as a car-

cinogen

Reproductive toxicity

Components:

lambda-cyhalothrin (ISO):

Reproductive toxicity - As-

sessment

Weight of evidence does not support classification for repro-

ductive toxicity



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STOT - single exposure

Components:

lambda-cyhalothrin (ISO):

Assessment : The substance or mixture is not classified as specific target

organ toxicant, single exposure.

Hydrocarbons, C9, Aromatics:

Assessment : The substance or mixture is classified as specific target organ

toxicant, single exposure, category 3 with narcotic effects., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract

irritation.

ammonia:

Assessment : The substance or mixture is classified as specific target organ

toxicant, single exposure, category 3 with respiratory tract

irritation.

STOT - repeated exposure

Components:

lambda-cyhalothrin (ISO):

Assessment : The substance or mixture is not classified as specific target

organ toxicant, repeated exposure.

Aspiration toxicity

Components:

Hydrocarbons, C9, Aromatics:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks : May cause temporary itching, tingling, burning or numbness of

exposed skin, called paresthesia.

Components:

lambda-cyhalothrin (ISO):

Remarks : May cause temporary itching, tingling, burning or numbness of

exposed skin, called paresthesia.



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Ecotoxicity

Components:

lambda-cyhalothrin (ISO):

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 0,000078 mg/l

Exposure time: 96 h

LC50 (Ictalurus punctatus (channel catfish)): 0,00016 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0,00036 mg/l

Exposure time: 48 h

LC50 (Americamysis): 0,000007 mg/l

Exposure time: 48 h

EC50 (Hyalella azteca (Amphipod)): 0,000002 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (Raphidocelis subcapitata (freshwater green alga)): >

0,31 mg/l

Exposure time: 96 h

M-Factor (Acute aquatic tox-

icity)

100.000

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l

Exposure time: 3 h

Toxicity to fish (Chronic tox-

icity)

NOEC: 0,000031 mg/l

Exposure time: 300 d

Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0,000002 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea)

NOEC: 0,00022 µg/l Exposure time: 28 d Species: Americamysis

M-Factor (Chronic aquatic

toxicity)

100.000

Hydrocarbons, C9, Aromatics:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 9,2 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 3,2 mg/l

Exposure time: 48 h



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Toxicity to algae/aquatic

plants

ErC50 (Raphidocelis subcapitata (freshwater green alga)):

2,9 mg/l

Exposure time: 72 h

NOELR (Raphidocelis subcapitata (freshwater green alga)):

1,0 mg/l

End point: Growth rate Exposure time: 72 h

Toxicity to fish (Chronic tox-

icity)

NOELR: 1,228 mg/l Exposure time: 28 d

Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOELR: 2,144 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea)

Ecotoxicology Assessment

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

ammonia:

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Persistence and degradability

Components:

lambda-cyhalothrin (ISO):

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life (DT50): 7 d

Remarks: Product is not persistent.

Hydrocarbons, C9, Aromatics:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

Components:

lambda-cyhalothrin (ISO):

Bioaccumulation : Remarks: Bioaccumulates



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Mobility in soil

Components:

lambda-cyhalothrin (ISO):

Distribution among environ-

mental compartments

Remarks: immobile

Stability in soil : Dissipation time: 56 d

Percentage dissipation: 50 % (DT50) Remarks: Product is not persistent.

Other adverse effects

Components:

lambda-cyhalothrin (ISO):

Results of PBT and vPvB

assessment

This substance is not considered to be persistent, bioaccumu-

lating and toxic (PBT).

This substance is not considered to be very persistent and

very bioaccumulating (vPvB).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not contaminate ponds, waterways or ditches with chemi-

cal or used container.

Do not dispose of waste into sewer.

Where possible recycling is preferred to disposal or incinera-

tion.

If recycling is not practicable, dispose of in compliance with

local regulations.

Contaminated packaging : Empty remaining contents.

Triple rinse containers.

Empty containers should be taken to an approved waste han-

dling site for recycling or disposal. Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(LAMBDA-CYHALOTHRIN, SOLVENT NAPHTHA)

Class : 9
Packing group : III
Labels : 9

Remarks : This product can be subject to exemptions when packaged in

single or combination packagings containing a net quantity per



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single or inner packaging of 5 L or less for liquids, or having a

net mass of 5 kg or less for solids.

IATA-DGR

UN/ID No. : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.

(LAMBDA-CYHALOTHRIN, SOLVENT NAPHTHA)

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo

aircraft)

Packing instruction (passen: 964

ger aircraft)

Environmentally hazardous : yes

Remarks : This product can be subject to exemptions when packaged in

single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a

net mass of 5 kg or less for solids.

IMDG-Code

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

964

(LAMBDA-CYHALOTHRIN, SOLVENT NAPHTHA)

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F

Marine pollutant : yes
Remarks : This product can be subject to exemptions when packaged in

single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a

net mass of 5 kg or less for solids.

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

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.

15. REGULATORY INFORMATION

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

This Safety Data Sheet contains no country specific regulatory information. It may not meet the regulatory requirements of a specific country.

16. OTHER INFORMATION



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Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
Syngenta : Syngenta Occupational Exposure Limit

ACGIH / TWA : 8-hour, time-weighted average ACGIH / STEL : Short-term exposure limit : Time weighted average

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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