



SAFETY DATA SHEET

SIERRA

Version 1

Revision Date: 08.03.2019

Publish Date: 08.03.2019

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

1.1 Product identifier

Trade name : SIERRA

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

Use of the : Herbicide
Substance/Mixture

1.3 Details of the supplier of the safety data sheet

Company ADAMA South Africa (Pty) Ltd
Ground Floor, Simeka House,
The Vineyard Office Estate
99 Jip de Jager Drive
Bellville 7530
South Africa

Telephone : +27 (0) 21 982 1460

E-mail address : sds@adama.com

1.4 Emergency telephone number

Emergency telephone numbers : +27 (0) 82 446 8946
+27 (0) 861 555 777
+27 (0) 21 982 1460

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4

H332: Harmful if inhaled.

Skin sensitisation, Category 1

H317: May cause an allergic skin reaction.

Chronic aquatic toxicity, Category 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H411 Toxic to aquatic life with long lasting effects.



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Supplemental Hazard Statements : EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves.
Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

pinoxaden
cloquintocet-mexyl

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

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
tris(2-ethylhexyl) phosphate	78-42-2 201-116-6	Skin Irrit. 2; H315	>= 30 - < 50
solvent naphtha (petroleum), heavy arom.	64742-94-5 265-198-5 01-2119451151-53	Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 25 - < 30
2-methylpentane-2,4-diol	107-41-5 203-489-0 01-2119539582-35	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 10 - < 20
pinoxaden	243973-20-8	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1A; H317 STOT SE 3; H335 Aquatic Chronic 2; H411	>= 5 - < 10
cloquintocet-mexyl	99607-70-2 01-2119381871-32	Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 1 - < 2.5



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| For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- | | | |
|-------------------------|---|---|
| General advice | : | Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control centre or physician, or going for treatment. |
| If inhaled | : | Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
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: contains petroleum distillates and/or aromatic solvents. |

4.2 Most important symptoms and effects, both acute and delayed

- | | | |
|----------|---|--|
| Symptoms | : | Aspiration may cause pulmonary oedema and pneumonitis. |
|----------|---|--|

4.3 Indication of any immediate medical attention and special treatment needed

- | | | |
|-----------|---|--|
| Treatment | : | There is no specific antidote available.
Treat symptomatically.
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. |
|-----------|---|--|

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | | |
|------------------------------|---|---|
| Suitable extinguishing media | : | Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray |
|------------------------------|---|---|



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Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

Further information : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for 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).

6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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.



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7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : 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.

Other data : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

7.3 Specific end use(s)

Specific use(s) : For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
solvent naphtha (petroleum), heavy arom.	64742-94-5	TWA	20 ppm 100 mg/m ³	Supplier
2-methylpentane-2,4-diol	107-41-5	STEL	20 ppm 98 mg/m ³	CH SUVA
	107-41-5	TWA	10 ppm 49 mg/m ³	CH SUVA
pinoxaden	243973-20-8	TLV-C	0.1 mg/m ³	Syngenta
cloquintocet-mexyl	99607-70-2	TWA	10 mg/m ³	Syngenta

8.2 Exposure controls

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

Eye protection : No special protective equipment required.

Hand protection

Material : Nitrile rubber
Break through time : > 480 min
Glove thickness : 0.5 mm



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Remarks	: 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 each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Remove and wash contaminated clothing before re-use. Wear as appropriate: Impervious clothing
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 maximum 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. Use only respiratory protection equipment with CE-symbol including four digit test number.
Filter type	: Particulates type (P)
Protective measures	: The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: liquid, clear
Colour	: light yellow to orange brown
Odour	: sweetish



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pH	:	4.5
		Concentration: 1 % w/v
Flash point	:	103 °C(1025.0 hPa)
		Method: Pensky-Martens closed cup
Density	:	0.965 g/cm ³ (25 °C)
Auto-ignition temperature	:	380 °C
Viscosity		
Viscosity, dynamic	:	50 mPa.s (20 °C)
		22.39 mPa.s (40 °C)
Viscosity, kinematic	:	24.23 mm ² /s (40 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Surface tension	:	30.0 mN/m, 20 °C
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SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3 "Possibility of hazardous reactions".

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No dangerous reaction known under conditions of normal use.
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10.4 Conditions to avoid

Conditions to avoid	:	No decomposition if used as directed.
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10.5 Incompatible materials

Materials to avoid	:	None known.
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10.6 Hazardous decomposition products

Combustion or thermal decomposition will evolve toxic and irritant vapours.



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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity

: LD50 (Rat, female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity

: LC50 (Rat, male and female): > 2.42 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity

: LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Components:

2-methylpentane-2,4-diol:

Acute oral toxicity

: LD50 Oral (Rat): 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity

: LC50 (Rat): 70 ppm
Exposure time: 8 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity

: LD50 Dermal (Rat): 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

pinoxaden:

Acute oral toxicity

: LD50 (Rat, male and female): > 5,000 mg/kg

Acute inhalation toxicity

: LC50 (Rat, male): 4.63 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity

: LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

cloquintocet-mexyl:

Acute oral toxicity

: LD50 (Rat, male and female): > 5,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity



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Acute inhalation toxicity : LC50 (Rat, male and female): > 0.935 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Highest attainable concentration

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

Species: Rabbit

Result: Mild skin irritation

Components:

tris(2-ethylhexyl) phosphate:

Result: Irritating to skin.

2-methylpentane-2,4-diol:

Species: Rabbit

Result: Irritating to skin.

pinoxaden:

Method: Based on Human Evidence

Result: Irritating to skin.

cloquintocet-mexyl:

Species: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit

Result: No eye irritation

Components:

2-methylpentane-2,4-diol:

Species: Rabbit

Result: Irritation to eyes, reversing within 21 days

pinoxaden:

Species: Rabbit

Result: Irritation to eyes, reversing within 21 days

cloquintocet-mexyl:

Species: Rabbit

Result: No eye irritation



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Respiratory or skin sensitisation

Product:

Test Type: Buehler Test

Species: Guinea pig

Result: A skin sensitizer in animal tests.

Components:

pinoxaden:

Test Type: Local Lymph Node Assay

Species: Mouse

Result: The product is a skin sensitiser, sub-category 1A.

cloquintocet-mexyl:

Species: Guinea pig

Result: May cause sensitisation by skin contact.

Germ cell mutagenicity

Components:

2-methylpentane-2,4-diol:

Germ cell mutagenicity- Assessment

: In vitro tests did not show mutagenic effects

pinoxaden:

Germ cell mutagenicity- Assessment

: Animal testing did not show any mutagenic effects.

cloquintocet-mexyl:

Germ cell mutagenicity- Assessment

: Animal testing did not show any mutagenic effects.

Carcinogenicity

Components:

2-methylpentane-2,4-diol:

Carcinogenicity - Assessment

: Weight of evidence does not support classification as a carcinogen

pinoxaden:

Carcinogenicity - Assessment

: No evidence of carcinogenicity in animal studies.

cloquintocet-mexyl:

Carcinogenicity - Assessment

: No evidence of carcinogenicity in animal studies.



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Reproductive toxicity

Components:

2-methylpentane-2,4-diol:

Reproductive toxicity - Assessment
: No toxicity to reproduction

pinoxaden:

Reproductive toxicity - Assessment
: No toxicity to reproduction

cloquintocet-mexyl:

Reproductive toxicity - Assessment
: No toxicity to reproduction

STOT - single exposure

Components:

pinoxaden:

Assessment: Based on Human Evidence, The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. Remarks:
Breathing difficulties
Cough
Acute irritation of the respiratory system leading to tightness of the chest and an asthmatic condition.

Repeated dose toxicity

Components:

pinoxaden:

Remarks: No adverse effect has been observed in chronic toxicity tests.

cloquintocet-mexyl:

Remarks: No adverse effect has been observed in chronic toxicity tests.

Aspiration toxicity

Components:

solvent naphtha (petroleum), heavy arom.:

May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	: LC50 (Danio rerio (zebra fish)): 70.71 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 1.8 mg/l Exposure time: 48 h
Toxicity to algae	: ErC50 (Pseudokirchneriella subcapitata (green algae)): 61 mg/l Exposure time: 72 h



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Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects., Classification of the product is based on the summation of the concentrations of classified components.

Components:

solvent naphtha (petroleum), heavy arom.:

Ecotoxicology Assessment

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

2-methylpentane-2,4-diol:

Toxicity to fish

: LC50 (Gambusia affinis (Mosquito fish)): 8,510 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5,410 mg/l
Exposure time: 48 h

pinoxaden:

Toxicity to fish

: LC50 (Oncorhynchus mykiss (rainbow trout)): 10.3 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 52 mg/l
Exposure time: 48 h

LC50 (Americamysis bahia (Mysid shrimp)): 4.7 mg/l
Exposure time: 96 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 41 mg/l
Exposure time: 72 h

ErC50 (Skeletonema costatum (marine diatom)): 1.89 mg/l
Exposure time: 96 h

NOEC (Skeletonema costatum (marine diatom)): 0.94 mg/l
End point: Growth rate
Exposure time: 96 h

ErC50 (Lemna gibba (gibbous duckweed)): 6.6 mg/l
Exposure time: 7 d

NOEC (Lemna gibba (gibbous duckweed)): 0.73 mg/l
End point: Growth rate
Exposure time: 7 d

Toxicity to fish (Chronic toxicity) : NOEC: 6.6 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)



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cloquintocet-mexyl:

Toxicity to fish

: LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.97 mg/l
Exposure time: 96 h

Toxicity to daphnia and other
aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): > 0.82 mg/l
Exposure time: 48 h

Toxicity to algae

: ErC50 (Desmodesmus subspicatus (Scenedesmus
subspicatus)): > 2.2 mg/l
Exposure time: 72 h

NOEC (Desmodesmus subspicatus (green algae)): 0.12 mg/l
End point: Growth rate
Exposure time: 72 h

Toxicity to microorganisms

: EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h

Toxicity to daphnia and other
aquatic invertebrates
(Chronic toxicity)

: NOEC: > 0.437 mg/l
Exposure time: 21 d
Species: Daphnia (water flea)

12.2 Persistence and degradability

Components:

2-methylpentane -2,4-diol:

Biodegradability

: Result: Readily biodegradable.

pinoxaden:

Biodegradability

: Result: Not readily biodegradable.

Stability in water

: Degradation half life: 0.3 d
Remarks: Product is not persistent.

cloquintocet-mexyl:

Biodegradability

: Result: Not readily biodegradable.

Stability in water

: Degradation half life: 0.4 d
Remarks: Product is not persistent.

12.3 Bioaccumulative potential

Components:

pinoxaden:

Bioaccumulation

: Remarks: Low bioaccumulation potential.

Partition coefficient: n-
octanol/water

: log Pow: 3.2 (25 °C)



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cloquintocet-mexyl:

Bioaccumulation

: Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water

: log Pow: 5.24 (25 °C)

12.4 Mobility in soil

Components:

pinoxaden:

Distribution among environmental compartments

: Remarks: Moderately mobile in soils

Stability in soil

: Percentage dissipation: 50 % (DT50: 0.1 - 1.8 d)
Remarks: Product is not persistent.

cloquintocet-mexyl:

Distribution among environmental compartments

: Remarks: immobile

Stability in soil

: Percentage dissipation: 50 % (DT50: 2.4 d)
Remarks: Product is not persistent.

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..

Components:

2-methylpentane-2,4-diol:

Assessment

: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

pinoxaden:

Assessment

: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

cloquintocet-mexyl:

Assessment



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: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

12.6 Other adverse effects

Components:

tris(2-ethylhexyl) phosphate:

Additional ecological information

: No data available

solvent naphtha (petroleum), heavy arom.:

Additional ecological information

: No data available

2-methylpentane-2,4-diol:

Additional ecological information

: No data available

pinoxaden:

Additional ecological information

: No data available

cloquintocet-mexyl:

Additional ecological information

: No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

: Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
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 handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

ADN

: UN 3082



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ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(SOLVENT NAPHTHA)
ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(SOLVENT NAPHTHA)
RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(SOLVENT NAPHTHA)
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(SOLVENT NAPHTHA)
IATA : Environmentally hazardous substance, liquid, n.o.s.
(SOLVENT NAPHTHA)

14.3 Transport hazard class(es)

ADN : 9
ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADN
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

ADR
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (E)

RID
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9



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IMDG

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

IATA (Cargo)

Packing instruction (cargo aircraft) : 964
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft) : 964
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

IATA (Passenger)

Marine pollutant : yes

IATA (Cargo)

Marine pollutant : yes

14.6 Special precautions for user

Not applicable

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable
: Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable



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Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
E2	ENVIRONMENTAL HAZARDS	200 t	500 t
34	Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2,500 t	25,000 t

Other regulations : Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

Youth Employment Protection Regulation (ArGV 5, SR 822 115): Adolescents up to completion of their 18th year are only allowed to come in contact or get exposed to this product at their place of work if the Federal Office for Professional Education and Technology (BBT) or the State Secretariat for Economic Affairs (SECO) has granted an exemption.

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

SECTION 16: Other information

Full text of H-Statements

- H304 : May be fatal if swallowed and enters airways.
- H315 : Causes skin irritation.
- H317 : May cause an allergic skin reaction.
- H319 : Causes serious eye irritation.
- H332 : Harmful if inhaled.
- H335 : May cause respiratory irritation.
- H400 : Very toxic to aquatic life.
- H410 : Very toxic to aquatic life with long lasting effects.
- H411 : Toxic to aquatic life with long lasting effects.



SAFETY DATA SHEET

SIERRA

Version 1

Revision Date: 08.03.2019

Publish Date: 08.03.2019

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Acute aquatic toxicity
Aquatic Chronic	: Chronic aquatic toxicity
Asp. Tox.	: Aspiration hazard
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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; TCSI - Taiwan Chemical Substance 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

Further information

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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