

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARADUR® HW 1196 BD

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	22.02.2019	400001009240	Date of first issue: 22.02.2019

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

1.1 Product identifier

Trade name : ARADUR® HW 1196 BD

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

Use of the Substance/Mixture : Component used for the manufacture of electrical insulation parts

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe)BVBA
Address : Everslaan 45
3078 Everberg
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40
E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency telephone number

Emergency telephone number : Centres Antipoison et de Toxicovigilance:
ANGERS: 02 41 48 21 21
BORDEAUX: 05 56 96 40 80
LILLE: 0 825 812 822
LYON: 04 72 11 69 11
MARSEILLE 04 91 75 25 25
NANCY: 03 83 32 36 36
PARIS: 01 40 05 48 48
RENNES: 02 99 59 22 22
STRASBOURG: 03 88 37 37 37
TOULOUSE: 05 61 77 74 47
EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
+86 532 83889090
India: + 91 22 42 87 5333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1/800/424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Serious eye damage, Category 1 H318: Causes serious eye damage.

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Respiratory sensitisation, Category 1

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation, Category 1

H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

: Danger

Hazard statements

: H317
H318
H334

May cause an allergic skin reaction.

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

: **Prevention:**

P261

Avoid breathing mist or vapours.

P280

Wear protective gloves/ eye protection/ face protection.

P284

Wear respiratory protection.

Response:

P304 + P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P342 + P311

If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Hazardous components which must be listed on the label:

tetrahydro-4-methylphthalic anhydride

1,2,3,6-tetrahydro-3-methylphthalic anhydride

1,2,3,6-tetrahydrophthalic anhydride

hexahydro-4-methylphthalic anhydride

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.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Tetrahydro-4-methylphthalic anhydride	34090-76-1 251-823-9 607-240-00-0 01-2119513209-45	Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317	>= 20 - < 30
1,2,3,6-tetrahydro-3-methylphthalic anhydride	5333-84-6 226-247-6 607-240-00-0 01-2119906338-37	Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317	>= 3 - < 10
1,2,3,6-Tetrahydrophthalic anhydride	85-43-8 201-605-4 607-099-00-5 01-2119486679-14	Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317 Aquatic Chronic 3; H412	>= 3 - < 10
Hexahydro-4-methylphthalic anhydride	19438-60-9 243-072-0 607-241-00-6 01-2119510879-29	Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317	>= 3 - < 10
Benzyltrimethylamine	103-83-3 203-149-1 612-074-00-7 01-2119529232-48	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 4; H312 Skin Corr. 1B; H314 Aquatic Chronic 3; H412	>= 0,1 - < 0,25

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- | | |
|-------------------------|---|
| General advice | : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended. |
| If inhaled | : Call a physician or poison control centre immediately.
If unconscious, place in recovery position and seek medical advice. |
| In case of skin contact | : If on skin, rinse well with water. |
| In case of eye contact | : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty |

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of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Specific extinguishing methods : No data is available on the product itself.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in

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accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Neutralize with chalk, alkali solution or ammonia.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See Section 1 for emergency contact information., For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Use only with adequate ventilation/personal protection.
Provide sufficient air exchange and/or exhaust in work rooms.
For personal protection see section 8.
Keep container closed when not in use.
Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.
Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage : Keep container tightly closed in a dry and well-ventilated

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areas and containers place. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : Keep away from oxidizing agents and strongly acid or alkaline materials.

Recommended storage temperature : 2 - 18 °C

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
benzyltrimethylamine	Workers	Inhalation	Long-term systemic effects	14,6 mg/m3
	Workers	Inhalation	Long-term local effects	1 mg/m3
	Workers	Dermal	Long-term systemic effects	2,3 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	43,75 mg/m3
	Consumers	Dermal	Long-term systemic effects	1,25 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	1,25 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
benzyltrimethylamine	Fresh water	0,005 mg/l
	Marine water	0,0005 mg/l
	Freshwater - intermittent	0,013 mg/l
	Sewage treatment plant	534 mg/l
	Fresh water sediment	0,071 mg/kg dry weight (d.w.)
	Marine sediment	0,007 mg/kg dry

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		weight (d.w.)
	Soil	0,011 mg/kg dry weight (d.w.)

8.2 Exposure controls

Personal protective equipment

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection
Material : butyl-rubber
Break through time : > 8 h

Material : Nitrile rubber
Break through time : 10 - 480 min

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Ensure adequate ventilation.
Suitable respiratory equipment:
Respirator with a half face mask
Recommended Filter type:
Combined particulates and organic vapour type
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : Filter type A-P2 (organic vapours, particles)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : beige

Odour : aromatic

Odour Threshold : No data is available on the product itself.

pH : 3 (20 °C)
Concentration: 500 g/l

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Freezing point	: No data is available on the product itself.
Melting point	: No data is available on the product itself.
Boiling point	: > 200 °C
Flash point	: 190 °C Method: Pensky-Martens closed cup, closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Burning rate	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: No data is available on the product itself.
Relative vapour density	: No data is available on the product itself.
Relative density	: No data is available on the product itself.
Density	: 1,8 g/cm ³ (23 °C)
Solubility(ies)	
Water solubility	: partly soluble (20 °C)
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-octanol/water	: No data is available on the product itself.
Auto-ignition temperature	: No data is available on the product itself.
Decomposition temperature	: > 200 °C
Viscosity	
Viscosity, dynamic	: 4 500 - 12 000 mPa.s (20 °C) Method: ISO 2555
Explosive properties	: No data is available on the product itself.
Oxidizing properties	: No data is available on the product itself.

9.2 Other information

No data available

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SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

Burning produces noxious and toxic fumes.
Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

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

Acute inhalation toxicity - Product : Acute toxicity estimate : > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Components:

tetrahydro-4-methylphthalic anhydride:

Acute dermal toxicity : LD50 (Rat, male and female): > 2 000 mg/kg
Method: OECD Test Guideline 402

1,2,3,6-tetrahydro-3-methylphthalic anhydride:

Acute dermal toxicity : (Rat, male and female): > 2 000 mg/kg
Method: OECD Test Guideline 402

1,2,3,6-tetrahydrophthalic anhydride:

Acute dermal toxicity : LD50 Dermal (Rat, male and female): > 2 000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

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hexahydro-4-methylphthalic anhydride:

Acute dermal toxicity : LD50 Dermal (Rat, male and female): > 2 000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

benzyltrimethylamine:

Acute dermal toxicity : Acute toxicity estimate : 1 100 mg/kg
Method: Converted acute toxicity point estimate

LD50 (Rabbit, male): 1 660 mg/kg
Assessment: The component/mixture is moderately toxic after single contact with skin.

LD50 (Rabbit, male): 1 477 mg/kg

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Product:

Remarks: Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitisation

Product:

Exposure routes: Skin
Species: Guinea pig
Result: Causes sensitisation.

Exposure routes: Respiratory Tract
Species: Humans
Result: Causes sensitisation.

Remarks: Causes sensitisation.

Assessment: No data available

Germ cell mutagenicity

Components:

tetrahydro-4-methylphthalic anhydride:
Genotoxicity in vitro : Test Type: gene mutation test

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Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

: Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Test Type: Ames test
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

1,2,3,6-tetrahydro-3-methylphthalic anhydride:

Genotoxicity in vitro

: Test Type: Ames test
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

1,2,3,6-tetrahydrophthalic anhydride:

Genotoxicity in vitro

: Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

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: Test Type: Ames test
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

hexahydro-4-methylphthalic anhydride:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

: Test Type: Ames test
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

benzyltrimethylamine:

Genotoxicity in vitro : Test Type: Ames test
Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: reverse mutation assay
Result: negative

: Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster cells
Concentration: .213 mg/ml
Metabolic activation: with and without metabolic activation
Method: Chromosome aberration test in vitro
Result: positive

: Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Test Type: In vitro mammalian cell gene mutation test

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Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Components:

benzylidimethylamine:

Genotoxicity in vivo

: Test Type: In vivo micronucleus test
Test species: Mouse
Cell type: Somatic
Application Route: Oral
Exposure time: 24 h
Dose: 150 mg/kg
Result: negative

Carcinogenicity

No data available

Carcinogenicity -
Assessment

: No data available

Reproductive toxicity

Components:

tetrahydro-4-methylphthalic anhydride:

Effects on fertility

: Test Type: Combined Repeated Dose Toxicity Study with the
Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Application Route: Oral
Dose: 0, 30, 100 and 300 mg/kg
General Toxicity - Parent: No observed adverse effect level: >
300 mg/kg body weight
General Toxicity F1: No observed adverse effect level: > 300
mg/kg body weight
Method: OECD Test Guideline 422

1,2,3,6-tetrahydro-3-methylphthalic anhydride:

Test Type: Combined Repeated Dose Toxicity Study with the
Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Application Route: Oral
Dose: 0, 30, 10 and 300 milligram per kilogram
Frequency of Treatment: 1 daily
General Toxicity - Parent: No observed adverse effect level:
300 mg/kg body weight
General Toxicity F1: No observed adverse effect level: 300
mg/kg body weight
Method: OECD Test Guideline 422

1,2,3,6-tetrahydrophthalic anhydride:

Species: Rat, male and female

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Application Route: Oral
General Toxicity - Parent: No observed adverse effect level:
250 mg/kg body weight
Method: OECD Test Guideline 421

hexahydro-4-methylphthalic anhydride:

Test Type: Combined Repeated Dose Toxicity Study with the
Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Application Route: Oral
General Toxicity - Parent: No observed adverse effect level: >
300 mg/kg body weight
General Toxicity F1: No observed adverse effect level: > 300
mg/kg body weight
Method: OECD Test Guideline 422

Components:

1,2,3,6-tetrahydro-3-methylphthalic anhydride:

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat, male and female
Application Route: Oral
Dose: 0, 30, 100 and 300 milligram per kilogram
Duration of Single Treatment: 38 - 49 d
General Toxicity Maternal: No observed adverse effect level:
100 mg/kg body weight
Developmental Toxicity: No observed adverse effect level: >
300 mg/kg body weight
Method: OECD Test Guideline 422

hexahydro-4-methylphthalic anhydride:

Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
> 140 mg/kg body weight
Embryo-foetal toxicity: No observed adverse effect level: >
140 mg/kg body weight
Method: OECD Test Guideline 414

benzyltrimethylamine:

Species: Rat
Application Route: Oral
Teratogenicity: No observed adverse effect level: 150 mg/kg
body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

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STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

tetrahydro-4-methylphthalic anhydride:

Species: Rat, male and female

NOAEL: 100

Application Route: Oral

Exposure time: 49 days Number of exposures: daily

Dose: 0, 30, 100 and 300mg/kg/day

Group: yes

Method: OECD Test Guideline 422

1,2,3,6-tetrahydro-3-methylphthalic anhydride:

Species: Rat, male and female

NOAEL: 100

Application Route: Oral

Exposure time: 38 - 49 days Number of exposures: Daily

Dose: 0, 30, 100 and 300mg/kg bw

Group: yes

Method: OECD Test Guideline 422

1,2,3,6-tetrahydrophthalic anhydride:

Species: Rat, male and female

NOAEL: 600 mg/kg

Application Route: oral (gavage)

Method: Regulation (EC) No. 440/2008, Annex, B.7

Species: Rat, male and female

NOAEL: 100 mg/kg

Application Route: oral (gavage)

Method: Regulation (EC) No. 440/2008, Annex, B.7

hexahydro-4-methylphthalic anhydride:

Species: Rat, male and female

NOEL: 50 mg/kg

NOAEL: 450 mg/kg

Application Route: Oral

Method: OECD Test Guideline 407

Target Organs: Stomach

benzyltrimethylamine:

Species: Rat, male and female

NOEL: 50 mg/kg

Application Route: Ingestion

Exposure time: 672 h Number of exposures: 7 d

Method: Subacute toxicity

Species: Rat, male and female

NOAEL: ca. 150 mg/kg

Application Route: Ingestion

Exposure time: 672 h Number of exposures: 7 d

Method: Subacute toxicity

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Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

Components:

benzyltrimethylamine:
May be harmful if swallowed and enters airways.

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

tetrahydro-4-methylphthalic anhydride:

Toxicity to fish : LC50 (*Oryzias latipes* (Japanese medaka)): > 100 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203

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- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 130 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): 64 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (algae)): 32 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
- Toxicity to microorganisms : EC50 (activated sludge): 69,87 mg/l
Exposure time: 3 h
Test Type: flow-through test
Method: OECD Test Guideline 209
- Toxicity to fish (Chronic toxicity) : NOEC: 100 mg/l
Exposure time: 14 d
Species: Oryzias latipes (Japanese medaka)
Test Type: flow-through test
Method: OECD Test Guideline 204
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 20 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211
- 1,2,3,6-tetrahydro-3-methylphthalic anhydride:
- Toxicity to fish : LC50 (Oryzias latipes (Japanese medaka)): > 100 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 130 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): 75 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (algae)): 32 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
- Toxicity to microorganisms : EC50 (activated sludge): 69,87 mg/l
Exposure time: 3 h

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Test Type: flow-through test
Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : NOEC: 100 mg/l
Exposure time: 14 d
Species: *Oryzias latipes* (Japanese medaka)
Test Type: flow-through test
Method: OECD Test Guideline 204

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 20 mg/l
Exposure time: 21 d
Species: *Daphnia magna* (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211

1,2,3,6-tetrahydrophthalic anhydride:

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): > 100 mg/l
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: Immobilization
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (*Scenedesmus capricornutum* (fresh water algae)): 65,3 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

NOEC (*Scenedesmus capricornutum* (fresh water algae)): 50 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

hexahydro-4-methylphthalic anhydride:

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 135 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

NOEC (*Pseudokirchneriella subcapitata* (algae)): 32 mg/l
Exposure time: 72 h

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- Test Type: static test
Method: OECD Test Guideline 201
- Toxicity to microorganisms : EC50 (activated sludge): 218,8 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
- benzyltrimethylamine:
- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 37,8 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.
- Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 1,34 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.
- EC10 (Desmodesmus subspicatus (green algae)): 0,24 mg/l
Exposure time: 72 h
Test Type: static test
Method: Directive 67/548/EEC, Annex V, C.3.
- Toxicity to microorganisms : EC50 (Pseudomonas putida): 749,6 mg/l
Exposure time: 17 h
Test Type: static test
Test substance: Fresh water
Method: DIN 38 412 Part 8
- EC10 (Pseudomonas putida): 534 mg/l
Exposure time: 17 h
Test Type: static test
Test substance: Fresh water
Method: DIN 38 412 Part 8
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,789 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.20
- Ecotoxicology Assessment
- Acute aquatic toxicity : Harmful to aquatic life.
- Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

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12.2 Persistence and degradability

Components:

tetrahydro-4-methylphthalic anhydride:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 100 mg/l
Result: Not readily biodegradable.
Biodegradation: 0 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 28 d
Method: OECD Test Guideline 301C

Stability in water : Degradation half life (DT50): 4,3 min (5 °C)
pH: 7
Method: OECD Test Guideline 111

Degradation half life (DT50): 3,2 min (20 °C)
pH: 7
Method: OECD Test Guideline 111

Degradation half life (DT50): 2,9 min (25 °C)
pH: 7
Method: OECD Test Guideline 111

1,2,3,6-tetrahydro-3-methylphthalic anhydride:

Biodegradability : Inoculum: activated sludge
Concentration: 100 mg/l
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

Stability in water : Degradation half life (DT50): 4,3 min (5 °C)
pH: 7
Method: OECD Test Guideline 111

Degradation half life (DT50): 3,2 min (20 °C)
pH: 7
Method: OECD Test Guideline 111

Degradation half life (DT50): 2,9 min (25 °C)
pH: 7
Method: OECD Test Guideline 111

1,2,3,6-tetrahydrophthalic anhydride:

Biodegradability : Concentration: 11,5 mg/l
Result: Biodegradable, but failing 10-d window
Biodegradation: 99 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 28 d
Kinetic:

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7 d: 2 %
14 d: 17 %
21 d: 58 %
27 d: 98 %
28 d: 99 %
Method: Regulation (EC) No. 440/2008, Annex, C.4-A

Stability in water : Degradation half life (DT50): 6,92 min (20 °C)
pH: 7
Method: OECD Test Guideline 111

Degradation half life (DT50): 2,17 min (30 °C)
pH: 7
Method: OECD Test Guideline 111

Degradation half life (DT50): 1,05 min (50 °C)
pH: 7
Method: OECD Test Guideline 111

hexahydro-4-methylphthalic anhydride:

Biodegradability : Inoculum: activated sludge
Concentration: 40 mg/l
Result: Not readily biodegradable.
Biodegradation: 2 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

benzylidimethylamine:

Biodegradability : Inoculum: activated sludge
Concentration: 30 mg/l
Result: Not readily biodegradable.
Biodegradation: 0 - 2 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

12.3 Bioaccumulative potential

Components:

tetrahydro-4-methylphthalic anhydride:

Partition coefficient: n- : log Pow: 1,88 (40 °C)
octanol/water pH: 5,9
Method: OECD Test Guideline 117

1,2,3,6-tetrahydro-3-methylphthalic anhydride:

Bioaccumulation : Bioconcentration factor (BCF): 3,16

Partition coefficient: n- : log Pow: 1,75 (40 °C)
octanol/water pH: 5,3
Method: OECD Test Guideline 117

1,2,3,6-tetrahydrophthalic anhydride:

Bioaccumulation : Bioconcentration factor (BCF): 3,30

Partition coefficient: n- : log Pow: 1,29 (40 °C)

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Content: 80 %
Method: Calculation, Mackay Level III Fugacity Model

: Medium: Sediment
Content: 0,12 %
Method: Calculation, Mackay Level III Fugacity Model

Distribution among environmental compartments : Koc: 130 ml/g, log Koc: 2,113
Method: QSAR

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

ADR

Not regulated as dangerous goods

RID

Not regulated as dangerous goods

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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

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

REACH - List of substances subject to authorisation - Future sunset date : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : hexahydro-4-methylphthalic anhydride

Occupational Illnesses (R-461-3, France) : 44

Other regulations:

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

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

DSL : This product contains one or several components listed in the Canadian NDSL.

AICS : On the inventory, or in compliance with the inventory

NZIoC : not determined

ENCS : On the inventory, or in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : On the inventory, or in compliance with the inventory

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Inventories

AICS (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

15.2 Chemical safety assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

Full text of H-Statements

H226	: Flammable liquid and vapour.
H302	: Harmful if swallowed.
H312	: Harmful in contact with skin.
H314	: Causes severe skin burns and eye damage.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H331	: Toxic if inhaled.
H334	: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Flam. Liq.	: Flammable liquids
Resp. Sens.	: Respiratory sensitisation
Skin Corr.	: Skin corrosion
Skin Sens.	: Skin sensitisation

Further information

Classification of the mixture:

Eye Dam. 1	H318
Resp. Sens. 1	H334
Skin Sens. 1	H317

Classification procedure:

Calculation method
Calculation method
Calculation method

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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