

SAFETY DATA SHEET

according to the Globally Harmonized System and the National Code of Practice for the Preparation of Material Safety Data Sheets

LAUROX

Version 2

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AU / EN

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Information
 Trade name : LAUROX

Proper shipping name : ORGANIC PEROXIDE TYPE D, SOLID

Use of the Substance/Mixture : Specific use(s): Polymerization initiator

Company : Nouryon Functional Chemicals B.V.
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2. HAZARDS IDENTIFICATION

GHS Classification

Organic peroxides, Type D

GHS label elements

Hazard pictograms :



Flame

Signal word : Danger

Hazard statements : H242 Heating may cause a fire.

Precautionary statements

: **Prevention:**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P234 Keep only in original packaging.

P235 Keep cool.

P240 Ground and bond container and receiving equipment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage:

P403 Store in a well-ventilated place.

Other hazards which do not result in classification

No further data available.

Risk of dust explosion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name : Organic peroxide
 Chemical nature : Substance

Hazardous substance

Chemical name	CAS-No.	Classification	Concentration [%]
Dilauroyl peroxide	105-74-8	Org. Perox. D; H242	>= 99 - <= 100

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Consult a physician.
 Show this safety data sheet to the doctor in attendance.

Inhalation : Remove to fresh air.
 Rinse nose and mouth with water.

Skin contact : Take off contaminated clothing and shoes immediately.

Eye contact : Rinse with plenty of water.
 Remove contact lenses.
 Protect unharmed eye.
 Keep eye wide open while rinsing.
 If eye irritation persists, consult a specialist.

Ingestion : Clean mouth with water and drink afterwards plenty of water.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.

Notes to physician

Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

Treatment : Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards during firefighting / Specific hazards arising from the chemical : CAUTION: reignition may occur.
 Supports combustion.
 Water spray may be ineffective unless used by experienced firefighters.
 Do not allow run-off from fire fighting to enter drains or water courses.
 Risks of ignition followed by flame propagation or secondary

- explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.
Hazardous decomposition products formed under fire conditions.
- Combustion products : Fire will produce smoke containing hazardous combustion products (see section 10).
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Hazchem Code : 1WE
- Further information : Use water spray to cool unopened containers.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- Personal precautions : Avoid dust formation.
Ensure adequate ventilation.
Remove all sources of ignition.
- Emergency measures on accidental release : Evacuate personnel to safe areas.
Only qualified personnel equipped with suitable protective equipment may intervene.
Prevent unauthorised persons entering the zone.
- Environmental precautions : Prevent product from entering drains.
- Methods for cleaning up / Methods for containment : Keep wetted with water.
Confinement must be avoided.
Pick up and arrange disposal without creating dust.
Collect in plastic container for disposal as hazardous waste.
Never return spills in original containers for re-use.
- Reference to other sections : For disposal considerations see section 13.

For personal protection see section 8.

7. HANDLING AND STORAGE

Handling

- Advice on safe handling : For personal protection see section 8.
Avoid creating dust.
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Do not smoke.
Open drum carefully as content may be under pressure.
- Advice on protection against : Use explosion protected equipment.

fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.
 Keep away from sources of ignition - No smoking.
 No sparking tools should be used.
 Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps).
 Do not cut or weld on or near this container even when empty.
 Keep away from combustible material.

Temperature class : It is recommended to use electrical equipment of temperature group T3. However, autoignition can never be excluded.

Storage

Requirements for storage areas and containers : No smoking.
 Keep in a well-ventilated place.
 Keep in a dry place.
 Electrical installations / working materials must comply with the technological safety standards.
 Store at room temperature in the original container.
 Keep only in original container.
 Store away from other materials.

Maximum storage temperature: : 30 °C

Other data : Maximum storage temperature is for quality only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Carbon dioxide	124-38-9	TWA	5,000 ppm 9,000 mg/m3	AU OEL
		STEL	30,000 ppm 54,000 mg/m3	AU OEL
		TWA	12,500 ppm 22,500 mg/m3	AU OEL
		STEL	30,000 ppm 54,000 mg/m3	AU OEL
		TWA	5,000 ppm	ACGIH
		STEL	30,000 ppm	ACGIH

Components	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure
Dust		TWA	4 mg/m3		AU OEL	Total dust

Engineering measures : Explosion proof ventilation recommended.
Provide appropriate exhaust ventilation at places where dust is formed.

Personal protective equipment

Respiratory protection : Half mask with a particle filter P2 (EN 143)

Hand protection

Material : Neoprene

Material : Nitrile rubber

Eye protection : Tightly fitting safety goggles

Skin and body protection : Protective suit

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and at the end of workday.

Environmental exposure controls

General advice : Prevent product from entering drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : flakes

Colour : white

Odour : Faint.

Odour Threshold : No data available

pH : neutral

Melting point : 53 - 55 °C

Boiling point/boiling range : Decomposes below the boiling point.

Flash point : Not applicable

Evaporation rate : Not applicable

Flammability (solid, gas) : Decomposition products may be flammable.

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	1.03 (20 °C)
Bulk density	:	460 kg/m ³ (20 °C)
Solubility(ies)		
Water solubility	:	< 0.0001 g/l (20 °C)
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	log Pow: > 6.5
Auto-ignition temperature	:	Test method not applicable
Decomposition temperature	:	SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.
Self-Accelerating decomposition temperature (SADT)	:	50 °C
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	Not classified as oxidising.
Active Oxygen Content	:	3.97 %
Organic peroxides	:	> 99 %

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

10. STABILITY AND REACTIVITY

Conditions to avoid	:	Confinement must be avoided. Heat, flames and sparks.
Materials to avoid	:	Contact with the following incompatible materials will result in hazardous decomposition: Acids and bases Iron

	<p>Copper Reducing agents Heavy metals Rust Do not mix with peroxide accelerators, unless under controlled processing. Use only stainless steel 316, PP, polyethylene or glass-lined equipment. For queries regarding the suitability of other materials please contact the supplier.</p>
Hazardous decomposition products	<p>: Docosane Undecane Undecyl dodecanoate Carbon dioxide</p>
Thermal decomposition	<p>: SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.</p>
Reactivity	<p>: Stable under normal conditions.</p>
Chemical stability	<p>: Stable under recommended storage conditions.</p>
Hazardous reactions	<p>: Dust may form explosive mixture in air.</p>
Self-Accelerating decomposition temperature (SADT)	<p>: 50 °C</p>

11. TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION:

Hazard Summary

Acute toxicity	: Not classified based on available information.
Skin corrosion/irritation	: Not classified based on available information.
Serious eye damage/eye irritation	: Not classified based on available information.
Respiratory or skin sensitisation	: Respiratory sensitisation: Not classified based on available information. Skin sensitisation: Not classified based on available information.
Germ cell mutagenicity	: Not classified based on available information.
Carcinogenicity	: Not classified based on available information.

- Reproductive toxicity : Not classified based on available information.
- STOT - single exposure : Not classified based on available information.
- STOT - repeated exposure : Not classified based on available information.
- Aspiration hazard : Not classified based on available information.

Potential Health Effects

- Inhalation : Product dust may be irritating to the respiratory system.
- Skin : Product dust may be irritating to skin.
- Eyes : Product dust may be irritating to eyes.
- Ingestion : Not expected to be irritating.
- Aggravated Medical Condition : None known.
- Symptoms of Overexposure : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

Toxicology Assessment

- Toxicology, Metabolism, Distribution : Contains no hazardous ingredients according to GHS
- Acute effects : No skin irritation
No eye irritation
- Sensitisation : Did not cause sensitisation on laboratory animals.
- Repeated dose toxicity : No adverse effect has been observed in chronic toxicity tests.
- Further information : No further data available.

Test result

TOXICOLOGY DATA FOR THE COMPONENTS:

Test result

Component: Dilauroyl peroxide

- Acute oral toxicity : LD50: > 2,000 mg/kg
Species: Rat
- Acute inhalation toxicity : No data available
- Acute dermal toxicity : LD50: > 2,000 mg/kg
Species: Rat
- Skin irritation : Species: Rabbit
Result: No skin irritation

Eye irritation	: Species: Rabbit Result: No eye irritation
Repeated dose toxicity	: Species: Rat NOAEL: 1,000 mg/kg Application Route: Oral
Germ cell mutagenicity Genotoxicity in vitro	: Ames test Result: negative
Genotoxicity in vivo	: Result: Not mutagenic.
Carcinogenicity	: study scientifically unjustified
Reproductive toxicity	: Not classified due to data which are conclusive although insufficient for classification.
Target Organ Systemic Toxicant - Repeated exposure	: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration toxicity	: No aspiration toxicity classification

12. ECOLOGICAL INFORMATION

PRODUCT INFORMATION:

Ecotoxicology Assessment

Additional ecological information : None known.

Test result

Ecotoxicity effects

Toxicity to fish : LC50: > 0.3 mg/l
Exposure time: 96 h
Species: Poecilia reticulata (guppy)
No toxicity at the limit of solubility

Elimination information (persistence and degradability)

Biodegradability : Result: Readily biodegradable.

COMPONENTS:

Test result

Component: Dilauroyl peroxide

Ecotoxicity effects

- Toxicity to fish : LC50: > 0.3 mg/l
Exposure time: 96 h
Species: Poecilia reticulata (guppy)
No toxicity at the limit of solubility
- Toxicity to daphnia and other aquatic invertebrates : EC50: > 9.7 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202
No toxicity at the limit of solubility
- Toxicity to algae : ErC50: > 1 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Test Type: Growth inhibition
Method: OECD Test Guideline 201
No toxicity at the limit of solubility
- NOEC: > 0.089 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Test Type: Growth inhibition
Method: OECD Test Guideline 201
No toxicity at the limit of solubility
- Toxicity to bacteria : EC50: > 1,000 mg/l
Exposure time: 0.5 h
Species: activated sludge
Test Type: Respiration inhibition
Method: Domestic OECD Guideline 209

Elimination information (persistence and degradability)

- Bioaccumulation : Bioconcentration factor (BCF): 77.38
- Biodegradability : Result: Readily biodegradable.
Method: Closed Bottle test

13. DISPOSAL CONSIDERATIONS

- Product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of contents/container in accordance with local regulation.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not burn, or use a cutting torch on, the empty drum.
Due to the high risk of contamination recycling/recovery is not recommended.
Follow all warnings even after the container is emptied.

14. TRANSPORT INFORMATION**International Regulations****IATA-DGR**

UN/ID No.	: UN 3106
Proper shipping name	: Organic peroxide type D, solid (Dilauroyl peroxide)
Class	: 5.2
Subsidiary risk	: HEAT
Packing group	: Not Assigned
Labels	: 5.2 (HEAT)
Packing instruction (cargo aircraft)	: 570
Packing instruction (passenger aircraft)	: 570
Environmentally hazardous	: no

IMDG-Code

UN number	: UN 3106
Proper shipping name	: ORGANIC PEROXIDE TYPE D, SOLID (Dilauroyl peroxide)
Class	: 5.2
Packing group	: Not Assigned
Labels	: 5.2
EmS Code	: F-J, S-R
Marine pollutant	: no

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

Not applicable for product as supplied.

National Regulations**ADG**

UN number	: UN 3106
Proper shipping name	: ORGANIC PEROXIDE TYPE D, SOLID (Dilauroyl peroxide)
Class	: 5.2
Packing group	: Not Assigned
Labels	: 5.2
Hazchem Code	: 1WE
Environmentally hazardous	: no

15. REGULATORY INFORMATION**Notification status**

TCSI	: YES. On the inventory, or in compliance with the inventory
TSCA	: YES. All substances listed as active on the TSCA inventory
AIIC	: YES. On the inventory, or in compliance with the inventory
DSL	: YES. All components of this product are on the Canadian DSL
ENCS	: YES. On the inventory, or in compliance with the inventory
ISHL	: YES. On the inventory, or in compliance with the inventory
KECI	: YES. On the inventory, or in compliance with the inventory
PICCS	: YES. On the inventory, or in compliance with the inventory
IECSC	: YES. On the inventory, or in compliance with the inventory

NZIoC : NO. Not in compliance with the inventory
 TECI : YES. On the inventory, or in compliance with the inventory

For explanation of abbreviation see section 16.

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

Prohibition/Licensing Requirements : There is no applicable prohibition, authorisation and restricted use requirements, including for carcinogens referred to in Schedule 10 of the model WHS Act and Regulations.

Standard for the Uniform Scheduling of Medicines and Poisons : No poison schedule number allocated

Prohibition/Licensing Requirements : There is no applicable prohibition, authorisation and restricted use requirements, including for carcinogens referred to in Schedule 10 of the model WHS Act and Regulations.

Further information : none

16. OTHER INFORMATION

Full text of H-Statements

H242 : Heating may cause a fire.

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 AU OEL : Australia. Workplace Exposure Standards for Airborne Contaminants.

ACGIH / TWA : 8-hour, time-weighted average
 ACGIH / STEL : Short-term exposure limit
 AU OEL / TWA : Time weighted average
 AU OEL / TWA : Exposure standard - time weighted average
 AU OEL / STEL : Exposure standard - short term exposure limit

AllC - 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

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.

End of Safety Data Sheet.
