

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519

Borlink™ LS4201S

Version 4.0

Revision Date:
2025/05/09

Date of last issue: 2024/10/21
Date of first issue: 2018/10/30

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Borlink LS4201S

Chemical nature : The product is a polyethylene polymer.

Manufacturer or supplier's details

Supplier : Borealis AG
Trabrennstrasse 6-8, 1020 Vienna, Austria
Telephone: +43 1 22400 0

Emergency telephone number : 0532 8388 9090 (NRCC)
+86 4001 2001 74 (3E), Access code: 336296

E-mail address : sds@borealisgroup.com

Recommended use of the chemical and restrictions on use

Recommended use : Raw material for plastics industry
Restrictions on use : Use only according to our recommendations.

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	: pellets
Colour	: natural colour
Odour	: odourless

Causes mild skin irritation. May damage the unborn child.

GHS Classification

Skin corrosion/irritation : Category 3
Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms :



Signal word : Danger

Borlink is a trademark of the Borealis group.

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Hazard statements	:	H316 Causes mild skin irritation. H360D May damage the unborn child.
Precautionary statements	:	Prevention: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Response: P308 + P313 IF exposed or concerned: Get medical advice/ attention. P332 + P313 If skin irritation occurs: Get medical advice/ attention. Storage: P405 Store locked up. Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards

Not classified based on available information.

Health hazards

Causes mild skin irritation. May damage the unborn child.

Environmental hazards

Not classified based on available information.

Additional Labelling:

Contains 4-methyl-2,4-diphenyl-1-pentene, 6,6'-di-tert-butyl-4,4'-thiodi-m-cresol. May produce an allergic reaction.

Other hazards which do not result in classification

The product burns, but is not classified as flammable.
Dust from the product gives a potential risk for dust explosion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
bis(α,α -dimethylbenzyl) peroxide	80-43-3	≥ 1 - < 2.5

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4-methyl-2,4-diphenyl-1-pentene	6362-80-7	≥ 0.25 -< 1
6,6'-di-tert-butyl-4,4'-thiodi-m-cresol	96-69-5	≥ 0.1 -< 0.25

4. FIRST AID MEASURES

If inhaled	: Move to fresh air in case of accidental inhalation of vapours or decomposition products. Seek medical advice immediately.
In case of skin contact	: Wash off with soap and plenty of water. Call a physician if irritation develops or persists. If molten material comes in contact with the skin, cool with plenty of water. DO NOT remove solidified product, as removal could result in severe tissue damage. Obtain medical attention.
In case of eye contact	: Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention if irritation develops and persists.
If swallowed	: If swallowed, rinse mouth with water (only if the person is conscious). Seek medical advice immediately.
Most important symptoms and effects, both acute and delayed	: Inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.
Notes to physician	: Treat symptomatically. No specific instructions needed.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Water in spread jet, dry chemicals, foam or carbon dioxide.
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: Principal toxicant in the smoke is carbon monoxide.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Ensure adequate ventilation.
Environmental precautions	: Should not be released into the environment. It is recommended to implement systems and practices (such as Operation Clean Sweep®) to prevent accidental release of

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plastics in to the environment.

Methods and materials for containment and cleaning up : Vacuum or sweep up spill.
All spill of material must be removed immediately to prevent slipping accidents.
Recycle or dispose loose material properly.
Do not flush into surface water or sanitary sewer system.

7. HANDLING AND STORAGE

Handling

Advice on protection against fire and explosion : Dust from the product gives a potential risk for dust explosion.
All equipment shall be grounded.
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Advice on safe handling : During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released.
Provide adequate ventilation.
Local exhaust ventilation may be necessary.
Avoid inhalation of dust and decomposition fumes.
Avoid contact with skin and eyes.
The product contains small amounts of a substance classified as sensitising, which may produce an allergic reaction to susceptible personnel.
Personnel sensitised to this substance should not be allowed to handle the product.

Avoidance of contact : Strong oxidizing agents
Reducing agents
Strong acids and strong bases

Storage

Conditions for safe storage : Store locked up.
Further information on storage stability : Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
6,6'-di-tert-butyl-4,4'-thiodi-m-	96-69-5	TWA	1 mg/m3	ACGIH

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cresol		(Inhalable particulate matter)		
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Engineering measures : Provide adequate ventilation.
Local exhaust ventilation may be necessary.

Personal protective equipment

Respiratory protection : In case of dust development use dust mask.
In the case of vapour formation use a respirator with an approved filter.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
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.

Eye/face protection : Safety glasses
Skin and body protection : Protective clothing

Hand protection
Material : Neoprene
Material : Nitrile rubber

Remarks : 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.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : pellets
Colour : natural colour
Odour : odourless
Odour Threshold : No data available
pH : Not applicable insoluble
Melting point/ range : 100 - 140 °C

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Boiling range	: Decomposes on heating.
Flash point	: Not applicable (solid)
Evaporation rate	: Not applicable (solid)
Flammability (solid, gas)	: The product is not flammable.
Upper explosion limit / Upper flammability limit	: Not applicable
Lower explosion limit / Lower flammability limit	: Not applicable
Vapour pressure	: Not applicable (solid)
Relative vapour density	: No data available
Relative density	: No data available
Density	: 0.9 - 1.0 g/cm ³
Solubility(ies)	
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: Not applicable insoluble
Auto-ignition temperature	: > 320 °C
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Particle size	: 3 - 6 mm

10. STABILITY AND REACTIVITY

Reactivity	: Stable under recommended storage conditions.
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Chemical stability	:	The product is a stable thermoplastic with no chemical reactivity below 140°C. Above 140°C the intended crosslinking reaction occurs.
Possibility of hazardous reactions	:	None known.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidizing agents Reducing agents Strong acids and strong bases
Hazardous decomposition products	:	Under fire conditions: Carbon monoxide During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released.

11. TOXICOLOGICAL INFORMATION

Skin corrosion/irritation

Product:

Remarks : Prolonged skin contact may give skin irritation caused by the peroxide content present on the surface of the granules.

Serious eye damage/eye irritation

Product:

Remarks : Contact with eyes may cause irritation.

Further information

Product:

Remarks : Inhalation of dust may irritate the respiratory tract.
Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to daphnia and other aquatic invertebrates : NOEC (Daphnia magna (Water flea)):
Exposure time: 48 h

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Test Type: Immobilization
Method: OECD Test Guideline 202
GLP: yes
Remarks: No effect up to the limit of solubility.
Read-across (Analogy)

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)):
End point: Growth rate
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201
GLP: yes
Remarks: No effect up to the limit of solubility.
Read-across (Analogy)

Components:

4-methyl-2,4-diphenyl-1-pentene:

M-Factor (Acute aquatic toxicity) : 10

M-Factor (Chronic aquatic toxicity) : 10

6,6'-di-tert-butyl-4,4'-thiodi-m-cresol:

Toxicity to fish : LC50 (fathead minnow (Pimephales promelas)): 0.36 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.16 mg/l
Exposure time: 48 h

M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not accumulate in organisms.

Components:

bis(α,α -dimethylbenzyl) peroxide:

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Bioaccumulation : Bioconcentration factor (BCF): 137 - 1,470
Exposure time: 56 d
Temperature: 25 °C
Concentration: 0.01 mg/l

Mobility in soil

Product:

Mobility : Remarks: Not expected to adsorb on soil.
Remarks: The product is insoluble and floats on water.

Other adverse effects

Product:

Additional ecological information : Should not be released into the environment.
The product is not classified as hazardous for the environment.
Information given is based on tests on mixtures with similar compositions.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of contents/ container to an approved waste disposal plant.
Check with local regulations.
Contaminated packaging : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable

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Packing group : Not applicable
Labels : Not applicable

IATA-DGR

UN/ID No. : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable
Packing instruction (cargo aircraft) : Not applicable
Packing instruction (passenger aircraft) : Not applicable

IMDG-Code

UN number : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable
EmS Code : Not applicable
Marine pollutant : Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations

GB 6944/12268

Not regulated as a dangerous good

Special precautions for user

Remarks : Not dangerous goods in the meaning of ADR/RID, ADN, IMDG-Code, ICAO/IATA-DGR

15. REGULATORY INFORMATION

National regulatory information
Law on the Prevention and Control of Occupational Diseases

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16. OTHER INFORMATION

Further information

Other information : SDS according to GB/T 16483 and GB/T 17519.
Issuer : Borealis, Group Product Stewardship

Sources of key data used to compile the Safety Data Sheet : The classification information of components is based on raw material supplier data.

Sources of key data used to compile the Safety Data Sheet : Information given is based on tests on mixtures with similar compositions.
Information given is based on data of the components.

Date format : yyyy/mm/dd

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, 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

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Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Disclaimer

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however we do not assume any liability whatsoever for the accuracy and completeness of such information.

Borealis makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.

It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.

No liability can be accepted in respect of the use of Borealis' products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

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