

SAFETY DATA SHEET

Borlink™ LE4244EHV

Version 5.0

Revision Date:
26.04.2024

Date of last issue: 02.01.2020
Date of first issue: 02.01.2020

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

Product name : Borlink LE4244EHV

Manufacturer or supplier's details

Supplier : Borealis AG

Address : Trabrennstrasse 6-8, 1020 Vienna, Austria

Telephone : +43 1 22400 0

Emergency telephone number : +1 760 476 3962 (3E), Access code: 336296+1 760 476 3962 (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

GHS Classification

Skin irritation : Category 3

Skin sensitisation : Category 1

Reproductive toxicity : Category 1B

GHS-Labeling

Hazard pictograms :



Signal word : Danger

Hazard statements : H316 Causes mild skin irritation.
H317 May cause an allergic skin reaction.
H360D May damage the unborn child.

Precautionary statements : **Prevention:**

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P201 Obtain special instructions before use.
P261 Avoid breathing dust.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

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

Pure substance/mixture : Mixture
Chemical nature : The product is a polyethylene polymer.

Components

Chemical name	CAS-No.	Classification	MAC value mg/m3 / TSEL value	Concentration (% w/w)
bis(α,α-dimethylbenzyl) peroxide	80-43-3	Org. Perox.F; H242 Skin Irrit.2; H315 Eye Irrit.2A; H319 Repr.1B; H360 Aquatic Chronic2; H411	No data available	>= 1 - < 2,5
6,6'-di-tert-butyl-4,4'-thiodi-m-cresol	96-69-5	Skin Sens.1; H317 Aquatic Acute1; H400 Aquatic Chronic1; H410	No data available	>= 0,1 - < 0,25
polyethene	9002-88-4		No data available	> 90

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6,6'-di-tert-butyl-4,4'-thiodi-m-cresol	96-69-5	Skin Sens.1; H317 Aquatic Acute1; H400 Aquatic Chronic1; H410	No data available	$\geq 0,1 - < 0,25$

For explanation of abbreviations see section 16.

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.
Prolonged skin contact may give skin irritation caused by the peroxide content present on the surface of the granules.
May cause an allergic skin reaction.
- Notes to physician : Treat symptomatically.
No specific instructions needed.

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5. FIREFIGHTING MEASURES

Flammable properties

Flash point : Not applicable (solid)
Ignition temperature : > 320 °C

Upper explosion limit / Upper flammability limit : Not applicable

Lower explosion limit / Lower flammability limit : Not applicable

Flammability (solid, gas) : The product is not flammable.

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 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

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

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	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.
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

Contains no substances with occupational exposure limit values.

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.

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.

Eye protection : Safety glasses
Skin and body protection : Protective clothing
Hygiene measures : When using do not eat, drink or smoke.
Wash hands before breaks and at the end of workday.
Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	:	pellets
Colour	:	natural colour
Odour	:	odourless
pH	:	Not applicable insoluble
Melting range	:	100 - 140 °C
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)
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
Viscosity 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

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Reactivity	:	Stable under recommended storage conditions.
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

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
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)

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Components:

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 : EC50 (*Daphnia magna* (Water flea)): 0,16 mg/l
aquatic invertebrates Exposure time: 48 h

M-Factor (Acute aquatic : 1
toxicity)

M-Factor (Chronic aquatic : 1
toxicity)

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 : EC50 (*Daphnia magna* (Water flea)): 0,16 mg/l
aquatic invertebrates Exposure time: 48 h

M-Factor (Acute aquatic : 1
toxicity)

M-Factor (Chronic aquatic : 1
toxicity)

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:

Bioaccumulation : Bioconcentration factor (BCF): 137 - 1.470
Exposure time: 56 d
Temperature: 25 °C
Concentration: 0,01 mg/l

bis(α,α -dimethylbenzyl) peroxide:

Bioaccumulation : Bioconcentration factor (BCF): 137 - 1.470
Exposure time: 56 d

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Temperature: 25 °C
Concentration: 0,01 mg/l

Mobility in soil

Product:

Mobility : Remarks: Not expected to adsorb on soil.

Other adverse effects

Product:

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

Should not be released into the environment.

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

ADR

Not regulated as a dangerous good

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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

Not applicable for product as supplied.

Special precautions for user

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

15. REGULATORY INFORMATION

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

16. OTHER INFORMATION

Full text of H-Statements

H242	Heating may cause a fire.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H360	May damage fertility or the unborn child.
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.

Full text of other abbreviations

Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Irrit.	: Eye irritation
Org. Perox.	: Organic peroxides
Repr.	: Reproductive toxicity
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; 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; 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

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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; 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

Further information

Other information : SDS According to GOST 30333-2007
Issuer :

Borealis, Group Product Stewardship

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.

The classification information of components is based on raw material supplier data.

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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.