

# SAFETY DATA SHEET

## Borlink™ LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Borlink LE4201S

#### 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.

#### Manufacturer or supplier's details

Supplier : Borealis AG

Address : Wagramer Strasse 17-19, 1220 Vienna, Austria

Telephone : +43 1 22400 0

Emergency telephone number : +82 2 3479 8401 (NCEC Carechem 24)  
+65 3158 1074 (regional number, NCEC Carechem 24)

E-mail address : [sds@borealisgroup.com](mailto:sds@borealisgroup.com)

### 2. HAZARDS IDENTIFICATION

#### GHS Classification

Not a hazardous substance or mixture.

#### GHS label elements

Not a hazardous substance or mixture.

#### Other hazards which do not result in classification

The product burns, but is not classified as flammable.

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

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : The product is a polyethylene polymer.

#### Components

Chemical name	Common	CAS-No.	Concentration
---------------	--------	---------	---------------

Borlink is a trademark of the Borealis group.

Borealis AG | Wagramer Strasse 17-19 | 1220 Vienna | Austria  
Telephone +43 1 224 00 0 | Fax +43 1 22 400 333  
FN 269858a | CCC Commercial Court of Vienna | Website [www.borealisgroup.com](http://www.borealisgroup.com)



# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

	Name		(%)
bis( $\alpha,\alpha$ -dimethylbenzyl) peroxide	dicumyl peroxide (and other peroxides)	80-43-3	$\geq 1 - < 2.5$
6,6'-di-tert-butyl-4,4'-thiodi-m-cresol	6,6'-di-tert-butyl-4,4'-thiodi-m-cresol	96-69-5	$\geq 0.1 - < 1$

### 4. FIRST AID MEASURES

- In case of eye contact : Flush eyes with water as a precaution.  
Get medical attention if irritation develops and persists.
- In case of skin contact : Wash off with soap and plenty of water.  
Call a physician if irritation develops or persists.
- Cool melted product on skin with plenty of water. Do not remove solidified product.
- If inhaled : Move to fresh air.  
If symptoms persist, call a physician.
- If swallowed : If swallowed, rinse mouth with water (only if the person is conscious).  
If symptoms persist, call a physician.
- 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.
- Skin contact may provoke the following symptoms:  
Local irritation
- Notes to physician : Treat symptomatically.  
No specific instructions needed.

### 5. FIREFIGHTING MEASURES

#### Suitable and unsuitable extinguishing media

- Suitable extinguishing media : Water in spread jet, dry chemicals, foam or carbon dioxide.
- Unsuitable extinguishing media : High volume water jet

# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

- 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 : Prevent product from entering environment and drains.
- 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.

---

### 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 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 : Safety aspects do not require any special precautions in terms of storage.
- 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.

# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

Local exhaust ventilation may be necessary.

### Personal protective equipment

Respiratory protection : Ensure adequate ventilation.  
In case of dust development use dust mask.

Eye protection : Safety glasses

Hand protection

Remarks : Wear suitable gloves: neoprene Nitrile rubber butyl-rubber  
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.

Skin and body protection : Protective suit

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

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/Lower explosion limit

Upper explosion limit : Not applicable

# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable (solid)
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.

### 10. STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions	: Stable under recommended storage conditions. The product is a stable thermoplastic with no chemical reactivity below 140°C. Above 140°C the intended crosslinking reaction occurs. 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

#### Health hazard information

#### Acute toxicity

Not classified based on available information.

# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

---

### **Skin corrosion/irritation**

Not classified based on available information.

#### **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**

Not classified based on available information.

#### **Product:**

Remarks: Contact with eyes may cause irritation.

### **Respiratory or skin sensitisation**

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

### **Carcinogenicity**

Not classified based on available information.

### **Germ cell mutagenicity**

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 toxicity**

Not classified based on available 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:**

---

# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

- 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 : 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)

### Persistence and degradability

#### Product:

- Biodegradability : Remarks: Not readily biodegradable.

### Bioaccumulative potential

#### Product:

- Bioaccumulation : Remarks: Does not accumulate in organisms.

#### Components:

##### **bis( $\alpha,\alpha$ -dimethylbenzyl) peroxide:**

- 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: The product is insoluble and floats on water., 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 the mixture itself.

# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

---

### 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

- Waste from residues : Reuse or recycle if not contaminated.  
The product may be safely used as fuel.  
Proper combustion does not require any special flue gas control.  
Check with local regulations.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

#### Disposal precautions

Dispose of in accordance with local regulations.

---

### 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

Not regulated as a dangerous good

##### IATA-DGR

Not regulated as a dangerous good

##### IMDG-Code

Not regulated as a dangerous good

- 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

Refer to section 15 for specific national regulation.

#### Special precautions for user

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



# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

---

### 15. REGULATORY INFORMATION

#### National regulatory information

##### Regulation under the Occupational Safety and Health Act

##### Harmful Substances Prohibited from Manufacturing

Not applicable

##### Harmful Substances Required Permission for Manufacture

Not applicable

##### Hazardous substances requiring management

Not applicable

##### Special Management Materials

Not applicable

##### Controlled Substances Subject to Environment Monitoring

Not applicable

##### Controlled Substances Subject to Health Examination

Not applicable

##### Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

##### Toxic Chemicals

Not applicable

##### Restricted Chemicals

Not applicable

##### Prohibited Chemicals

Not applicable

##### Toxic Release Inventory

Not applicable

##### Accident Precaution Chemicals

Not applicable

##### Dangerous Substances Safety Management Act

Not Applicable to Dangerous Materials

##### Wastes Control Act

Industrial waste

Follow article 13 of the act to dispose the product waste

---

### 16. OTHER INFORMATION

#### Further information

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

# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

Sheet  
Issuing date : 2019/04/04

### Revision number and date

Number of Revision : 2.1  
Revision Date : 2019/04/24  
Other information : Issued according to: Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2016-19)  
Contact Point : Borealis, Group Product Stewardship / Maarit Vakkala

Date format : yyyy/mm/dd

### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; 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; CPR - Controlled Products Regulations; 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; 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

# SAFETY DATA SHEET

## Borlink LE4201S

Version 1.2

Revision Date:  
2019/04/24

Date of last issue: 2019/04/24  
Date of first issue: 2019/04/04

---

### 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.