SAFETY DATA SHEET

Borlink™ LE4201S

Version 5.0	Revision Date: 02.01.2020	Date of last issue: - Date of first issue: 02.01.2020

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

Product name : Borlink LE4201S

Manufacturer or supplier's details

Supplier : Borealis AG

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

Telephone : +43 1 22400 0

Emergency telephone number : +44 (0) 1235 239 670 (NCEC Carechem 24)

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

GHS-Labelling

Hazard pictograms :

Signal word : Warning

Hazard statements : H316 Causes mild skin irritation.
H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves.

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Response:
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Other hazards which do not result in classification

The product burns, but is not classified as flammable. 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical nature : The product is a polyethylene polymer.

Hazardous components

Chemical name	CAS-No.	Classification	MAC value mg/m3 / TSEL value	Concentration (% w/w)
polyethene	9002-88-4		MPC-STEL: 10 mg/m3 Class 4 - Low hazard	> 90
bis(α,α-dimethylbenzyl) peroxide	80-43-3	Org. Perox. C; H242 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Aquatic Chronic 2; H411		>= 1 - < 2,5
6,6'-di-tert-butyl-4,4'-thiodi-m-cresol	96-69-5	Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410		>= 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.
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	:	Flush eyes with water as a precaution.
If swallowed	:	Rinse mouth with water.
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.

5. FIREFIGHTING MEASURES

Flammable properties

Flash point	:	Not applicable (solid)
Ignition temperature	:	> 320 °C
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Flammability (solid, gas)	:	The product is not flammable.
Suitable extinguishing media	:	Water in spread jet, dry chemicals, foam or carbon dioxide.

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 represents a risk for dust explosions when dispersed with air in a sufficient concentration and with the presence of an ignition source. All equipment shall be grounded. Routine housekeeping will also contribute in preventing risks of dust explosions.
Advice on safe handling	:	During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released. 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.
Conditions for safe storage	:	Safety aspects do not require any special precautions in terms of storage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parameters /	Data Source

		exposure)	Permissible concentration	
polyethene	9002-88-4	MPC-STEL (aerosol)	10 mg/m3	RU OEL
	Further information: Class 4 - Low hazard			

Engineering measures : Provide adequate ventilation.
Local exhaust ventilation may be necessary.

Personal protective equipment

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

Hand protection

Remarks : Wear suitable gloves: neoprene , Nitrile rubber or 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.

Eye protection : Safety glasses

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.
Take off contaminated clothing and wash before reuse.

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 explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	Not applicable (solid)
Density	:	0,9 - 1,0 g/cm³
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

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

Acute toxicity

Not classified based on available information.

Skin corrosion/irritation

Causes mild skin irritation.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitisation

Skin sensitisation: May cause an allergic skin reaction.
Respiratory 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 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:

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)

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

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

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 mixtures with similar compositions.

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.

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

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

15. REGULATORY INFORMATION

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

No data available

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.
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
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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 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; 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 / Aino Haritonova
Sources of key data used to compile the Safety Data Sheet	:	Information given is based on tests on mixtures with similar compositions., The classification information of components is based on raw material supplier data.

Disclaimer

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