Borlink™ LE4201S

Version 4.0 Revision Date 01/20/2022 Former date 08/05/2020

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Borlink LE4201S

Manufacturer or supplier's details

Supplier : Borealis Compounds Inc
176 Thomas Road, NJ 07865 Port Murray, United States of America (USA)
Telephone: +1 908 850 6200

E-mail address : sds@borealisgroup.com

Emergency telephone number : +1 215 207 0061 (regional number, NCEC Carechem 24)
Borealis Compounds Inc, Borealis North America HSE: 908-850-6200 for Monday – Friday 8-4:30pm excluding holidays

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.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin sensitisation : Category 1

Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms :

Signal word : Danger

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

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.

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P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards

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.
Warning!
May form combustible dust concentrations in air (during processing).
The product burns, but is not classified as flammable.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Mixture

Chemical nature : The product is a polyethylene polymer.

Hazardous components

Chemical name	CAS-No.	Concentration (%)
bis(α,α-dimethylbenzyl) peroxide	80-43-3	>= 1 - < 5
6,6'-di-tert-butyl-4,4'-thiodi-m-cresol	96-69-5	>= 0.1 - < 1

SECTION 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. Skin contact may provoke the following symptoms: Local irritation May cause an allergic skin reaction. May damage the unborn child.
Notes to physician	:	Treat symptomatically. No specific instructions needed.

SECTION 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. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus and protective suit.

SECTION 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	:	Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Non-sparking tools should be used. 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.

SECTION 7. HANDLING AND STORAGE

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible	Basis

			concentration	
6,6'-di-tert-butyl-4,4'-thiodi-m-cresol	96-69-5	TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Inhalable particulate matter)	1 mg/m3	ACGIH
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
		PEL (Total dust)	10 mg/m3	CAL PEL
		PEL (respirable dust fraction)	5 mg/m3	CAL PEL

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

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment.

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

SECTION 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.

SECTION 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.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

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

Based on available data, the classification criteria are not met.

Product:

Remarks: Contact with eyes may cause irritation.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

May damage the unborn child.

STOT - single exposure

Based on available data, the classification criteria are not met.

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Aspiration toxicity

Based on available data, the classification criteria are not met.

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.

SECTION 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: 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.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : This substance, when discarded or disposed of is not specifically listed as a hazardous waste in Federal regulations. However, it could be hazardous if it is considered toxic, corrosive, ignitable or reactive according to Federal definitions (40 CFR 261). Additionally, it could be designated as hazardous waste if it is mixed with or comes in contact with a hazardous waste. If such contact or mixing may have occurred, check 40 CFR 261 to determine whether it is a hazardous waste.
The transportation, storage, treatment and disposal of this waste material must be conducted in accord-ance with all applicable Federal, state and local regulations.

Contaminated packaging : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 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

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

National Regulations

49 CFR
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

SECTION 15. REGULATORY INFORMATION

Borealis certifies that all chemical substances in this shipment comply with all applicable rules or orders under TSCA and that Borealis is not offering a chemical substance for entry in violation of TSCA or any applicable rule or order under TSCA.

Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

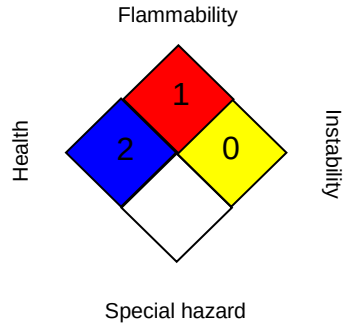
The product is classified and labelled in accordance with Hazard Communication Standard 2012 (29 CFR 1910.1200)

California Prop. 65
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

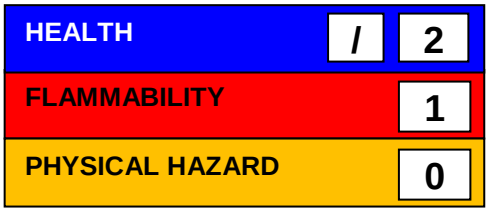
SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.
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Sources of key data used to compile the Safety Data Sheet	:	Safety data sheets of raw material suppliers. The classification information of components is based on raw material supplier data.
Revision Date	:	01/20/2022

Disclaimer

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