



Issuing(Revision) Date : 02-04-2024  
Version number : 0

# Safety Data Sheet(SDS)

According to Regulation (EC) No. 2020/878

## SECTION 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Product identifier : LLD UM2020JN 25KG BAG (PE)  
Other means of identification : N/A  
UFI Code. : N/A

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : 1.Raw material, Intermediates  
Uses advised against : Any use of the product other than for its identified uses is prohibited.

### 1.3 Details of the supplier of the safety data sheet

#### 1) Manufacturer in Korea

Name : LG Chem, Ltd.  
Address : 535, Sandanjungang-ro, Yeosu-si, Jeollanam-do, Republic of Korea  
Telephone number : +82-2-3773-1114, 08:30~18:00 (KST, Korea Standard Time)

#### 2) Customer Solution Center in Europe

Name : LG Chem Europe GmbH  
Address : Adolph-Prior-Straße 16, 65936 Frankfurt am Main, Germany  
Telephone number : +49-69-710-455-199, 09:00~17:00 (CET, Central European Time)  
Fax number : N/A  
Email : lgcegmsds@lgchem.com

### 1.4 Emergency telephone number

Emergency telephone number : +49-69-710-455-199 Customer Solution Center Europe  
Opening hours : 09:00~17:00 (CET, Central European Time)  
Other comments(e.g. language(s) of the phone service) : English, Deutsch, Korean available.

## SECTION 2. Hazards identification

### 2.1 Classification of the substance or mixture according to Regulation (EC) No 1272/2008

- Not classified

## 2.2 Label elements

### Hazard pictogram

The product does not require a hazard warning label in accordance with GHS criteria.

Labelling according to Regulation (EC) No 1272/2008 [CLP]

### Signal word

- NONE

### Hazard statements

- Not required

### Precautionary statements

-Not required

## 2.3 Other hazards

- According to Annex XIII of (EC) No 1907/2006, the substance does not meet PBT or vPvB criteria.
- According to Regulation(EU) 2017/2100 and 2018/605, the substance does not affect to endocrine system.
- The substance is not listed in Article 59
- No other hazards have been identified

## SECTION 3. Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2 . Mixtures

Substance name	CAS No.	Classification	SCL	ATE	PCT(wt%)
	EC No.		M-Factor		
	EU REACH No.				
1-Butene polymer with ethene	25087-34-7	No data available	No data available	No data available	99-100
	No data available		No data available		
	No data available				
Additives		No data available	No data available	No data available	0-1
			No data available		

※ Classification according Regulation(EC) No. 1272/2008 [EU CLP]

SCL : Specific concentration limit

M-Factor : The Multiplying factor

ATE : the acute toxicity estimate

## SECTION 4. First aid measures

### 4.1 Description of first aid measures

#### ○4.1.1 Following eye contact

- Get medical aid immediately.
- In case of contact with material, immediately flush eyes with running water for at least 15 minutes.

#### ○4.1.2 Following skin contact

- Get medical aid immediately.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- In case of contact with material, flush skin with running water.
- Launder contaminated clothing and shoes before re-use.
- Remove and isolate contaminated clothing and shoes.

#### ○4.1.3 Following inhalation

- Administer oxygen if breathing is difficult.
- Give artificial respiration if victim is not breathing.
- If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.
- Move to fresh air.
- Seek immediate medical assistance.

#### ○4.1.4 Following ingestion

- Get medical aid immediately.
- If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
- If unconscious but breathing, never give anything by mouth.

### 4.2 Most important symptoms and effects, both acute and delayed

- No data available

### 4.3 Indication of any immediate medical attention and special treatment needed

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

#### ○Suitable extinguishing media

- Large fire: Water spray/fog, regular foam (Suitable extinguishing media).
- Small fire: Dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO2 (Suitable extinguishing media).

#### ○Unsuitable extinguishing media

- Water Jet(May scatter and spread fire).

### 5.2 Special hazards arising from the substance or mixture(Hazardous combustion products)

- Burning can produce carbon monoxide and/or carbon dioxide and other harmful products.
- Containers may explode when heated.
- Dust explosions can occur where any dispersed powdered combustible material is present in high-enough concentrations in the atmosphere or other oxidizing gaseous medium, such as pure oxygen.
- Fire may produce irritating and/or toxic gases.
- May cause toxic effects if inhaled.
- May ignited from heat, friction or contamination.
- Some may burn, but not rapidly.

### 5.3 Advice for firefighters

- Contact may cause burns to skin and eyes.
- Dike fire-control water for later disposal; do not scatter the material.
- Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.
- Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Move containers from fire area if you can do it without risk.
- No action shall be taken involving any personal risk or without suitable training.
- Runoff may cause pollution.

## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

##### ○Emergency procedures

- Removal of ignition sources, provision of sufficient ventilation.

##### ○Protective equipment

- Wear suitable protective equipment to prevent any contamination of skin, eyes and personal clothing.

#### 6.1.2 For emergency responders

- Do not touch or go near exposed material.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Please note that materials and conditions to be avoided.
- Prevent dust cloud.
- Spilled material may cause a slipping hazard.
- Stop leak if you can do it without risk.
- Ventilate the contaminated area.

### 6.2 Environmental precautions

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

### 6.3 Methods and material for containment and cleaning up

#### 6.3.1 For containment

- No data available

#### 6.3.2 For cleaning up

- Clear spills immediately.
- Don't use a brush or compressed air for cleaning surfaces or clothing.
- For large amounts: Collect and dispose of with appropriate tools.
- For small amounts: Collect and dispose of with appropriate tools.
- Move containers from spill area. Use spark-proof tools and explosion-proof equipment.

#### 6.3.3 Other information

- Small Spill: Flush area with flooding quantities of water.

## 6.4 Reference to other sections

- Section 8 (protective equipment), section 13 (disposal instructions)

## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

- CAUTION: High temperature.
- Wear an appropriate Personal protection. (See Exposure Controls/Personal Protection section.)
- Wash thoroughly after handling.
- Use adequate machine for safety when package handling.
- Please note that materials and conditions to be avoided.
- May explode when dust cloud creation or friction.
- Check oxygen content before entering area.
- Caution: Dangerous fire hazard when exposed to heat, or flame, sparks.

### 7.2 Conditions for safe storage, including any incompatibilities

- Choose a place that can be protected from strong oxidizers and acid.
- Drum Handling: Must work at safe place., Loading more than 3 stack is prohibited.
- Please note that materials and conditions to be avoided.
- Store containers: AVOID the place where can be damage and contamination.
- Store in a closed container.
- Store in a cool/low-temperature, well-ventilated dry place away from heat and ignition sources.
- Store in a dry place. Store in a closed container.

### 7.3 Specific end uses

- See section 1 for recommended use.

## SECTION 8. Exposure controls/personal protection

### 8.1 Control parameters

Components	Occupational exposure	ACGIH regulations	Biological limit values	DNEL/DMEL	PNEC-Values
1-Butene polymer with ethene	TWA : No data available	TWA : No data available	No data available	No data available	No data available
	STEL : No data available	STEL : No data available			
Additives	TWA : No data available	TWA : No data available	No data available	No data available	No data available
	STEL : No data available	STEL : No data available			

\* The ACGIH has a TLV-TWA of 10 mg/m<sup>3</sup> (as total dust) for particulates having a quartz content of less than 1 percent.

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

- Ensure adequate exhaust and ventilation in work area.
- Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

## 8.2.2 Individual protection measures, such as personal protective equipment

### ○ Eye/face protection

- Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

- Provide emergency showers and eyewash.
- Wear Non-moisture permeable goggle for dust protection.
- Wear an appropriate eye protection.
- Wear suitable protective goggles and face shields.

### ○ Respiratory protection

- Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

- If there is a direct contact or exposure, wear a certified appropriate respiratory protection.
- In case of insufficient oxygen (<19.6%), wear a supplied air mask or self-contained respirator.

### ○ Skin protection

#### (i) Hand protection

- Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Neoprene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). Ethyl vinyl alcohol laminate ("EVAL"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

- Wear Non-moisture permeable chemical resistance protective gloves(latex, nitrile rubber, PVC) for prevent skin contact.
- Wear protective gloves made of appropriate material considering the physical and chemical properties of chemicals.
- Wear suitable protective gloves.

#### (ii) Other

- No data available

### ○ Thermal hazards

- Wear appropriate protective clothing considering the physical and chemical properties of chemicals.

## 8.2.3 Environmental exposure controls

- Ensure not to cause environmental pollution by discharging into rivers or other waterways.
- See section 6

## SECTION 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	solid	No data available
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Relative Vapour density	No data available	No data available
Density/Relative density	0.910~0.938	No data available
Kinematic viscosity	Not applicable	No data available
Decomposition temperature	No data available	No data available
Auto ignition temperature	330~410°C	No data available
Partition coefficient(n-octanol/water)	No data available	No data available
Solubility	No data available	No data available
Vapour pressure	No data available	No data available
Upper/lower flammability or explosive limits	No data available	No data available
Flammability(solid, gas)	No data available	No data available
Flash point	Not applicable	No data available
Initial boiling point and boiling range	Not applicable	No data available
Melting point/freezing point	90~140°C	No data available
pH	Not applicable	No data available
Odour	Odorless	No data available
Colour	Translucent white	No data available
Particle characteristics	No data available	No data available

## 9.2 Other information

### 9.2.1 Information with regard to physical hazard classes

Flammable liquids	Initial boiling point and boiling range:Not applicable, Flash point:Not applicable	No data available
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### 9.2.2 Other safety characteristics

No data available

## SECTION 10. Stability and reactivity

### 10.1 Reactivity

- Containers may explode when heated.
- Some may burn, but not rapidly.

### 10.2 Chemical stability

- Stable under normal temperatures and pressures.
- Under storage at normal ambient temperatures, the product is stable.

### 10.3 Possibility of hazardous reactions

- Fire may produce irritating and/or toxic gases.
- May cause toxic effects if inhaled.
- No hazardous reaction when handled and stored according to provisions.

### 10.4 Conditions to avoid

- Exposure to elevated temperatures can cause product to decompose. Avoid moisture.
- Ignition source(heat, spark, flame, etc.).

### 10.5 Incompatible materials

- Avoid contact with: Strong oxidizers, Flammables.
- Combustibles.
- Irritating and/or toxic gas.

#### 10.6 Hazardous decomposition products

- No known hazardous decomposition products
- This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regula

### SECTION 11. Toxicological information

#### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### ○Acute toxicity

##### ●Acute toxicity(Oral) > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : LD50 >6000 mg/kg Test species: Rat, Source: OECD Screening Information Data Set(<http://cs3-hq.oecd.org/scripts/hpv/>)

##### ●Acute toxicity(Dermal) > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : LD50 >2000 mg/kg Test species: Rat (GLPdata), Source: OECD Screening Information Data Set(<http://cs3-hq.oecd.org/scripts/hpv/>)

##### ●Acute toxicity(Inhalation:Gases) > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : No data available

##### ●Acute toxicity(Inhalation:Vapours) > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : No data available

##### ●Acute toxicity(Inhalation:Dust/mist) > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : No data available

##### ○Skin corrosion/ irritation > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : - No rabbit skin irritation reported, Source: International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>)

##### ○Serious eye damage/ irritation > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : - Highly corrosive reaction to rabbit eyes, Source: SIDS

##### ○Respiratory or skin sensitisation > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : No data available



○Skin sensitization > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available

- Additives : - No guinea pig skin sensitization reported., Source: International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>)

○Carcinogenicity > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available

- Additives : No data available

○Germ cell mutagenicity > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available

- Additives : - negative in limited tests for induction of bacterial mutations. - The in vivo bone marrow test for clastogenicity (in both micronucleus test and mid-term analysis of hamsters) was also negative. - Negative in mouse dominance lethality test. -These results suggest that this material has no mutagenic potential., Source: OECD Screening Information Data Set(<http://cs3-hq.oecd.org/scripts/hpv/>)

○Reproductive toxicity > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available

- Additives : The second generation of three rats at a concentration of 292.6 mg/kg bw/day did not adversely affect reproductive parameters. At the concentration of 1,030 mg/kg bw/day, the fertility index of the F0 generation decreased. At a concentration as high as 1,030 mg/kg bw/day, the fetal weight of the F2 generation decreases. The NOAEL for reproductive evaluation is 292.6 mg/kg bw/day., Source: OECD Screening Information Data Set(<http://cs3-hq.oecd.org/scripts/hpv/>)

○Specific target organ toxicity (single exposure) > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available

- Additives : No data available

○Specific target organ toxicity (repeated exposure) > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available

- Additives : - Rat, 13 weeks, NOAEL> 147 mg/kg- Only in women, the kidney weight was absolutely increased, and the increased kidney weight was not the same as the importance of toxicology. was not supported by histopathological changes., Source: International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>)

○Aspiration hazard > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available

- Additives : No data available

## 11.2. Information on other hazards

○11.2.1. Endocrine disrupting properties

- 1-Butene polymer with ethene : According to Regulation(EU) 2017/2100 and 2018/605, the substance not affects to endocrine system.

- Additives : According to Regulation(EU) 2017/2100 and 2018/605, the substance not affects to endocrine system.

○11.2.2. Other information

- 1-Butene polymer with ethene : No other hazards have been identified
- Additives : No other hazards have been identified

## SECTION 12. Ecological information

### 12.1 Toxicity > PRODUCT : Not classified

- Fish
  - 1-Butene polymer with ethene : No data available
  - Additives : LC50 >100 mg/l 96 hr Brachydanio rerio, Source: ECHA Registration data
- Crustaceans
  - 1-Butene polymer with ethene : No data available
  - Additives : No data available
- Aquatic Algae
  - 1-Butene polymer with ethene : No data available
  - Additives : EC50 >75.2 mg/l 72 hr Desmodesmus subspicatus, Source: ECHA Registration data

### 12.2 Persistence and degradability

- Persistence
  - 1-Butene polymer with ethene : (doesn't exist)
  - Additives : (>6 , calculated value), Source: International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>)
- Degradability
  - 1-Butene polymer with ethene : No data available
  - Additives : No data available
- Biodegradation
  - 1-Butene polymer with ethene : No data available
  - Additives : 6 (%) 28 days, Source: IUCLID

### 12.3 Bioaccumulative potential

- 1-Butene polymer with ethene : No data available
- Additives : 4.66, Source: IUCLID

### 12.4 Mobility in soil

- 1-Butene polymer with ethene : No data available
- Additives : No data available

### 12.5 Results of PBT and vPvB assessment

- 1-Butene polymer with ethene : Not applicable
- Additives : Not applicable

### 12.6 Endocrine disrupting properties

- 1-Butene polymer with ethene : According to Regulation(EU) 2017/2100 and 2018/605, the substance not affects to endocrine system.
- Additives : According to Regulation(EU) 2017/2100 and 2018/605, the substance not affects to endocrine system.

## 12.7 Other adverse effects > PRODUCT : Not classified

- 1-Butene polymer with ethene : No data available
- Additives : No data available

## SECTION 13. Disposal considerations

### 13.1 Waste treatment methods

#### 13.1.1 Product / Packaging disposal

- Empty containers should be taken to an approved waste handling site for recycling or disposal.

Waste codes / waste designations according to LoW

- 07-02 wastes from the MFSU of plastics, synthetic rubber and man-made fibres

#### 13.1.2 Waste treatment-relevant information

- Disposal according to local regulations.

#### 13.1.3 Sewage disposal-relevant information

- Disposal according to local regulations and avoid release to the environment.

#### 13.1.4 Other disposal recommendations

- No data available.

## SECTION 14. Transport information

14.1 UN number or ID number : Not applicable

14.2 UN proper shipping name : Not applicable

14.3 Transport hazard class(es) : Not applicable

14.4 Packing group : Not applicable

14.5 Environmental hazards : Not applicable

14.6 Special precaution for user

Emergency measures in case of fire : Not applicable

Emergency measures in the effluent : Not applicable

14.7 Maritime transport in bulk according to IMO instruments

- ADR

•Tunnel restriction code : Not applicable

- IMDG

•Marine pollutant : Not applicable

- Air transport(IATA)

•UN No. : Not applicable

•Proper shipping name : Not applicable

•Class or division : Not applicable

•Packing group : Not applicable

## SECTION 15. Regulatory information

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

- ETC regulation - EU. Chemicals & Articles Subject to Export Ban: Annex V (Art. 15), Regulation 649/2012/EU, as amended by Regulation 2022/643, OJ L 118, 20 April 2022
  - Not applicable
- ETC regulation - EU. Directive 2012/18/EU on major accident hazards involving dangerous substances, Annex I, OJ (L 197)1, 24 July 2012
  - Not applicable
- ETC regulation - EU. F-Gases Subject to Emission Limits/Reporting (Annexes I, II), Regulation 517/2014/EU on FGGs, 20 May 2014
  - Not applicable
- ETC regulation - EU. GHS Classification. CLP Regulation (EC) No 1272/2008, Annex VI, Table 3, Harmonized List of Hazardous Substances, as amended by Regulation (EU) 2024/197, OJ L of 5 January 2024
  - Not applicable
- ETC regulation - EU. Polluting Substances: Annex II, Directive 2010/75/EU on Industrial Emissions (IPPC), 17 December 2010
  - Not applicable
- ETC regulation - EU. REACH, Annex XIV, Substances Subject to Authorization (Authorization List), as amended through Regulation (EU) 2022/586, 11 April 2022
  - Not applicable
- ETC regulation - EU. REACH, Annex XVII, Restrictions on manufacture, placing on the market and use of certain dangerous substances, 1907/2006/EC, as amended by Reg 2021/2030/EU, 22 Nov 2021
  - Not applicable
- ETC regulation - EU. REACH: Candidate List of Substances of Very High Concern for Authorization (SVHC) (last inclusion as of 23 January 2024)
  - Not applicable
- ETC regulation - EU. Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances (L286, Vol. 52, 31 October 2009)
  - Not applicable
- ETC regulation - EU. Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances (L286, Vol. 52, 31 October 2009)
  - Not applicable
- ETC regulation - EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), 25 June 2019, as amended by Regulation 2021/277, 23 February 2021
  - Not applicable
- Global Inventory - EU. European Inventory of Existing Commercial Chemical Substances (EINECS)
  - Additives

## 15.2 Chemical Safety Assessment

Not applicable

## SECTION 16. Other information

### 16.1 Key literature references and sources for data

- CERI
- NCIS Safety testing of existing chemicals
- OECD SIDS
- OECD SIDS, EU IUCLID
- OECD Screening Information Data Set(<http://cs3-hq.oecd.org/scripts/hpv/>)

- OECD TG 301 C . OECD SIDS
- OECD TG404, OECD SIDS
- OECD TG423, Ministry of Environment Existing chemical substance safety test(2001-2004)
- SIDS
- Directivw 87/302/EEC, GLP . IUCLID
- ECHA
- ECHA Registration data
- EU CLP
- EU IUCLID
- IUCLID
- International Uniform ChemicalL Information Database(IUCLID)(<http://ecb.jrc.it/esis>)
- NCIS Existing chemical substance safety test

**16.2 Issuing date** : 2024-04-02

**16.3 Indication of changes**

**Revision number** : 0

**Revision date** : 2024-04-02

**Revision history** :

**16.4 Abbreviations and acronyms**