

Safety Data Sheet(SDS)

According to Regulation (EU) No. 2020/878

Version : 3-1

Revision date : 01-06-2026

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product identifier : LLDPE UR644

Other means of identification : No data

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

○ Relevant identified uses

1.Raw materials and intermediates

○ Uses advised against

Use for recommended use only

Do not use it for weapons manufacturing and related purposes.

1.3. Details of the supplier of the safety data sheet

○ Seller

Company name : Lotte Daesan Petrochem Corporation

Address : 82 Dokgot 1-ro, Daesan-eup, Seosan-si, Chungcheongnam-do

Telephone number : +82-41-689-5114

Fax number : +82-41-689-5985

Email : www.ldpc.co.kr (contact)

1.4. Emergency telephone number

Emergency phone number : (Control Room) +82-41-689-5119

Opening hours : 08:30~17:30 (GMT+9)

Other comments(e.g. language(s) of the phone service) : English

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

- Not applicable

2.2. Label elements

Hazard pictograms

- Not applicable

Signal word

- NONE

Hazard statements

- Not applicable

Precautionary statements

- Not applicable

2.3. Other hazards

- No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	1) CAS No 2) EC No	Classification	1) Index number 2) SCL 3) M-Factor 4) ATE	Content(wt%)
1-Butene polymer with ethene	1) 25087-34-7 2) 607-541-7		1) - 2) - 3) - 4) -	$\geq 95 \sim \leq 100$

SECTION 4: First aid measures

4.1. Description of first aid measures

- 4.1.1. Eye contact
 - Call a physician immediately.
- 4.1.2. Skin contact
 - Get medical attention if irritation develops and persists.
 - Remove contaminated clothing and shoes.
- 4.1.3. Inhalation
 - If symptoms persist, call a physician.
 - Move to fresh air.
- 4.1.4. If swallowed
 - If accidentally swallowed obtain immediate medical attention.

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

- In the case of accident or if you feel unwell, seek medical advice immediately.

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).
 - Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media
 - Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

- Heating or fire can release toxic gas.
- May cause toxic effects if inhaled.

5.3. Advice for firefighters

- In the event of fire, wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment
 - The wearing of suitable protective equipment to prevent any contamination of skin, eyes and personal clothing.
- Emergency procedures
 - Removal of ignition sources, provision of sufficient ventilation.

6.1.2. For emergency responders

- Wear protective equipment and keep unprotected persons away.
- Avoid dust formation.

6.2. Environmental precautions

- Try to prevent the material from entering drains or water courses.
- This product contains synthetic polymer microparticles as amended by Regulation (EU) 2023/2055. The synthetic polymer microparticles supplied is subject to conditions laid down by entry 78 of Annex XVII to Regulation.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

6.3.2. For cleaning up

- Clear spills immediately.
- Don't use a brush or compressed air for cleaning surfaces or clothing.

6.3.3. Other information

- Any information on personal protection and disposal is given in sections 8 and 13.
- Keep in suitable, closed containers for disposal.
- Pick up and arrange disposal without creating dust.

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

- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.

7.2. Conditions for safe storage, including any incompatibilities

- Please note that materials and conditions to be avoided.
- This product contains synthetic polymer microparticles as amended by Regulation (EU) 2023/2055. Take care to prevent environmental exposure during handling and storage.
- Store in a dry place. Store in a closed container.

7.3. Specific end use(s)

- See section 1 for recommended use.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

- Contains no substances with occupational exposure limit values.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- Ensure adequate ventilation and exhaust ventilation at the workplace.

8.2.2. Individual protection measures, such as personal protective equipment

○ Eye/face protection

- If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.

○ Skin protection

(i) Hand protection

- Wear chemical safety gloves.

(ii) Other

- No data available

○ Respiratory protection

- If you have a direct contact or exposed to the material, wear the appropriate form of respiratory protection certified.

○ Thermal hazards

- Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

8.2.3. Environmental exposure controls

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Property name	Values	Source
Physical state	Soild	
Colour	White	
Odour	Odorless	
Melting point/freezing point	85 - 140 °C	
Initial boiling point and boiling range(°C)	Not applicable	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	Not applicable	
Flash point(°C)	> 221 °C	
Auto ignition temperature	> 300 °C	
Decomposition temperature	No data available	
pH	Not applicable	
Kinematic viscosity(mm ² /s, 40°C)	No data available	
Solubility	Insolubility	
Partition coefficient(n-octanol/water)	No data available	
Vapour pressure	Not applicable	
Density/Relative density	No data available	
Relative Vapour density	No data available	
Particle characteristics	No data available	
Specific gravity	0.91 - 0.97	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

- No data available

9.2.2. Other safety characteristics

- No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

- No decomposition if stored and applied as directed.
- Stable at normal ambient temperature and pressure.

10.2. Chemical stability

- No decomposition if stored and applied as directed.
 - Stable at normal ambient temperature and pressure.
- 10.3. Possibility of hazardous reactions
- No decomposition if stored and applied as directed.
 - Stable at normal ambient temperature and pressure.
- 10.4. Conditions to avoid
- Follow precautionary advice and avoid incompatible materials and conditions
- 10.5. Incompatible materials
- Combustible material
- 10.6. 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, LD50 (Rat) : > 8,000 mg/kg
 - No data available
 - Acute toxicity(Dermal) PRODUCT : Not classified
 - No data available
 - Acute toxicity(Inhalation:Gases) PRODUCT : Not classified
 - No data available
 - Acute toxicity(Inhalation:Vapours) PRODUCT : Not classified
 - No data available
 - Acute toxicity(Inhalation:Dust/mist) PRODUCT : Not classified, LC50 (Rat) : 75.5 mg/l (노출 시간 : 30 분)
 - No data available
- Skin corrosion/irritation PRODUCT : Not classified
 - No data available
- Serious eye damage/eye irritation PRODUCT : Not classified
 - No data available
- Respiratory sensitization PRODUCT : Not classified
 - No data available
- Skin sensitization PRODUCT : Not classified
 - No data available
- Carcinogenicity PRODUCT : Not classified
 - No data available
- Germ cell mutagenicity PRODUCT : Not classified
 - No data available
- Reproductive toxicity PRODUCT : Not classified
 - No data available
- Specific target organ toxicity single exposure PRODUCT : Not classified
 - No data available

- Specific target organ toxicity repeated exposure PRODUCT : Not classified
 - No data available
- Aspiration hazard PRODUCT : Not classified
 - No data available

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties PRODUCT : Not classified

- 1-Butene polymer with ethene
Not applicable

11.2.2. Other information PRODUCT : Not classified

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

SECTION 12: Ecological information

12.1. Toxicity

- Fish PRODUCT : Not classified
No data available
- Crustaceans PRODUCT : Not classified
No data available
- Aquatic algae PRODUCT : Not classified
No data available

12.2. Persistence and degradability

- Degradability PRODUCT : Not classified
No data available
- Biodegradation PRODUCT : Not classified
No data available

12.3. Bioaccumulative potential

- n-octanol water partition coefficient PRODUCT : Not classified
- 1-Butene polymer with ethene
: (doesn't exist)
- Bioconcentration factor(BCF) PRODUCT : Not classified
No data available

12.4. Mobility in soil PRODUCT : Not classified

No data available

12.5. Result of PBT and vPvB assessment PRODUCT : Not classified

Not applicable

12.6. Endocrine disrupting properties PRODUCT : Not classified

Not applicable

12.7. Other adverse effects PRODUCT : Not classified

- 1-Butene polymer with ethene
: Not applicable

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.
- o Waste codes / waste designations according to LoW
 - No data available

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

- This product contains synthetic polymer microparticles as amended by Regulation (EU) 2023/2055. The synthetic polymer microparticles supplied is subject to conditions laid down by entry 78 of Annex XVII to Regulation.

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 : No

14.6. Special precautions 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 :

Not applicable

- ADR

· Tunnel restriction code : Not applicable

- IMDG

· Marine pollutant : No

- 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

15.1.1. EU regulations

- EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances
 - Not applicable
- EU - REACH (1907/2006) - Annex XIV - Substances Subject to Authorization
 - Not applicable

This product is 100% synthetic polymer microparticles as defined in Entry 78 of Annex XVII to Regulation (EC) No 1907/2006.

15.1.2. Other EU regulations

- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex III - Substances Subject to Release Reduction Provisions
 - Not applicable
- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex I - Substances Subject to Prohibitions
 - Not applicable
- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex IV - Waste Management - Concentration Limits
 - Not applicable
- EU - Persistent Organic Pollutants (POPs) (2019/1021) -Annex V-Waste Management-Maximum Concentration Limits
 - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - WB Phase 1 - VOCs
 - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - WB Phase 2 - VOCs
 - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II B - Vehicles - VOCs
 - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - SB Phase 1 - VOCs
 - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - SB Phase 2 - VOCs
 - Not applicable
- EU - Seveso III Directive (2012/18/EU) - Qualifying Quantities of Dangerous Substances - Lower-Tier Requirements

- Not applicable
- EU - Seveso III Directive (2012/18/EU) - Qualifying Quantities of Dangerous Substances - Higher-Tier Requirements
 - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Subject to Export Notification Procedure
 - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals and Articles Subject to Export Ban
 - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Subject to the PIC Procedure under the Rotterdam Convention
 - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Qualifying for PIC Notification
 - Not applicable

15.2. Chemical safety assessment

- A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

16.1. Key literature references and sources for data

NCIS, KOSHA, Montreal Protocol, ECHA, OECD SIDS, EU IUCLID, HSDB(PubChem), NITE, NTP, ACGIH, IARC, NIOSH, ChemIDplus, EPA, EPI Suite, INCHEM

16.2. Issuing date : 17-11-2025

16.3. Indication of changes

- Revision number : 3-1
- Revision date : 01-06-2026

16.4. Abbreviations and acronyms

ACGIH : American Conference of Governmental Industrial Hygienists
 ADR : Agreement Concerning the International Carriage of Dangerous Goods by Road
 ATE : The Acute Toxicity Estimate
 ECHA : European Chemicals Agency
 EPA : United States Environmental Protection Agency
 EPI Suite : The Estimation Programs Interface for Windows
 EU IUCLID : International Uniform Chemical Information Database
 HSDB : Hazardous Substances Data Bank
 IARC : International Agency for Research on Cancer
 IATA : International Air Transport Association
 IMDG : International Maritime Dangerous Goods Codes
 INCHEM : Internationally Peer Reviewed Chemical Safety Information
 M-Factor : The Multiplication Factor
 NIOSH : National Institute of Occupational Safety and Health
 NITE : National Institute of Technology and Evaluation(JAPAN)
 NTP : National Toxicology Program
 SCL : Specific Concentration Limit
 OECD SIDS : Organization for Economic Co-operation and Development Screening Information Dataset

For explanation of abbreviations see section 16.

- This substance/mixture contain(s) only ingredients which have been registered, or are exempt from registration, according to Regulation (EC) No. 1907/2006 (REACH).

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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