



LETTER OF CONFIRMATION

TO WHOM IT MAY CONCERN

This letter serves to inform and confirm that in Section 1 under the heading of "Other means of identification" of the Safety Data Sheet for Linear Low Density Polyethylene, the nomenclature used by PENERANG PETROCHEMICAL COMPANY SDN. BHD. (PRefChem) is corresponding to the nomenclature adopted by PETRONAS CHEMICALS GROUP which is printed and displayed on the bag as stated below:

LL4201A = LL0209AP
LL4211S = LL0209SP
LL4202A = LL0220AP
LL4212S = LL0220SP

Should you have any further questions, please contact PETRONAS Chemicals Marketing (Labuan) Ltd.
Thank you.

For and on behalf of PETRONAS Chemicals Marketing (Labuan) Ltd.

Yours sincerely,

HBK

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Hong Boon Khiam
Technical Sales Specialist

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SAFETY DATA SHEET



According to Occupational Health and Safety (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Malaysia Regulation 2013

Linear Low-Density Polyethylene (1-Butene)

Version : 1.2

Date of issue : 04 Jan 2022

Section 1. Identification of the hazardous chemical and of the supplier

Product identifier	: Linear Low-Density Polyethylene (1-Butene)
Other means of identification	: LL4201A, LL4211S, LL4202A, LL4212S
Recommended use	: Thermoplastic resin for extrusion and molding applications.
Restrictions on use	: This product must not be used in applications other than the above without first seeking the advice of the supplier

Manufacturer or Supplier's details

Manufacturer	: Pengerang Petrochemical Company Sdn Bhd First Floor, Administration Block A2, Pengerang Integrated Complex Management Office (PICMO), 81600 Pengerang, Johor, Malaysia.
Emergency telephone number (with hours of operation)	: 999 (BOMBA) National Poison Centre: +604-6570099 (Mon-Fri : 8.10 am - 5.10 pm) +6012-4309499 (Mon-Fri : 5.10 pm - 10.10 pm) & (Sat, Sun & Public holiday : 8.10 am - 5.10 pm)

Section 2. Hazards identification

Classification of the substance or mixture : Not classified.

Label elements

Signal word	: No signal word.
Hazard statements	: No known significant effects or critical hazards.
Precautionary statements	
General	: Not applicable.
Prevention	: Not applicable.
Response	: Not applicable.
Storage	: Not applicable.
Disposal	: Not applicable.

Other hazards which do not result in classification : Spilled product may present a dangerous slipping hazard
Product dust may be irritating to eyes
The molten form can cause thermal burns if in contact with skin

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Section 3. Composition and information of the ingredients of the hazardous chemical

Substance/mixture : Substance, may contain additives and stabilizers

Ingredient name	%	CAS number
1-Butene, polymer with ethene	>99	25087-34-7

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures**Description of necessary first aid measures**

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Molten material can cause severe burns. Do not try to peel molten material from the skin. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed**Potential acute health effects**

- Eye contact** : Dust may cause irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : The molten form can cause thermal burns if in contact with skin.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

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Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

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- Advice on general occupational hygiene** : Prevent dust accumulation. Avoid contact with heated or molten product. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	: Solid. [Pellets.]
Color	: Opaque.
Odor	: Odorless.
Odor threshold	: No data available.
pH	: Not applicable.
Melting point	: 110 to 125°C (230 to 257°F)
Boiling point	: No data available.
Flash point	: No data available.
Evaporation rate	: Not applicable.
Flammability (solid, gas)	: Polymer will burn but does not easily ignite.
Lower and upper explosive (flammable) limits	: No data available.
Vapor pressure	: Not applicable.
Vapor density	: No data available.
Density	: 0.91 to 0.93 g/cm ³
Bulk density	: 500 to 600 kg/m ³
Relative density	: No data available.
Solubility	: Insoluble in the following materials: cold water and hot water.
Solubility in water	: No data available.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available.
Viscosity	: No data available.
Flow time (ISO 2431)	: Not available.
Molecular weight	: Not applicable.
Type of aerosol	: Not applicable.
Ignition distance	: Not applicable.
Enclosed space ignition - Time equivalent	: Not applicable.
Enclosed space ignition - Deflagration density	: Not applicable.
Flame height	: Not applicable.
Flame duration	: Not applicable.

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Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid contact with strong oxidizers, excessive heat, sparks or open flame.
- Incompatible materials** : Strong oxidizing materials
- Hazardous decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information**Information on toxicological effects****Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
1-Butene, polymer with ethene	LD50 Oral	Rat	4 g/kg	-

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

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Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Dust may cause irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : The molten form can cause thermal burns if in contact with skin.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

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Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal information

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Additional information

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Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

Safety, health, and environmental regulations specific for the hazardous chemical

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of hazardous Chemicals) Regulations 2013. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: Not determined.
Japan	: Japan inventory (ENCS): All components are listed or exempted. Japan inventory (ISHL): Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
United States	: All components are listed or exempted.

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Section 16. Other information

History

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Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

✔ Indicates information that has changed from previously issued version.

Disclaimer

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