LOTTE CHEMICAL TITAN

SAFETY DATA SHEET

(According to CLASS Regulations 2013 [P.U. (A) 310/2013])

Lotte Chemical Titan Titanlene® LDPE

Titanlene® LDF 260GG

Version 1.3 Revision Date: 30 Sep 2016

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

1.1 Product identifier

Trade name	Titanlene® Low Density Polyethylene
Product grade	Titanlene® LDF 260GG

1.2 Other means of identification

Substance name	Low density polyethylene
Synonyms	Ethylene based homopolymer

1.3 Recommended use of the chemical and restrictions on use

Identified uses	Manufacture of plastic articles by extrusion, molding or other conversion processes.
Prohibited uses	None known.

1.4 Manufacturer details

Registered company name	Lotte Chemical Titan (M) Sdn Bhd
Address	PLO 312, Jalan Tembaga 4, Pasir Gudang Industrial Estate, 81700 Pasir Gudang, Johor, Malaysia
Telephone	+607 – 253 8888
Website	www.lottechem.my
Email	css@lottechem.my

1.5 Emergency telephone number

Emergency telephone	+607 – 253 8888 Ext: 3041 (Office hours only) Ext: 3001 (24-hours)

SECTION 2. Hazard identification

2.1 Classification of the substance or mixture

Not a hazardous material according to CLASS Regulations 2013 [P.U. (A) 310/2013].

2.2 Label elements

Not a hazardous material according to CLASS Regulations 2013 [P.U. (A) 310/2013].

2.3 Other hazards that do not result in classification

1. Molten plastic may cause severe thermal burn if contacted with skin.
2. Fume released during high temperature processing may cause respiratory irritation.
3. Dust generated during further processing, handling or by other means may form combustible dust concentrations in air.

SECTION 3. Composition / information on ingredients

Chemical Name	CAS Number	Concentration, wt %
Ethylene based homopolymer	9002 – 88 – 4	> 99 %
Additives	Mixture (Trade Secret)	< 1 %

NOTE: The product may contain varying levels of additives such as antioxidants and stabilizers.

SECTION 4. First-aid measures

4.1 Description of first-aid measures

Inhalation	➢ In case of accidental inhalation of fumes from overheating or combustion: • Quickly remove exposed individual to open area with fresh air available. • If symptoms persist, seek for medical attention.
Skin contact	➢ In case of contact with molten resin: • Immediately flush with large amounts of cool running water to cool the affected area. • **DO NOT** attempt to remove the molten resin from the skin. • **DO NOT** pull away clothing which has adhered to the skin as this can cause further injury. • Obtain immediate medical attention if burn is deep.
Eye contact	➢ If this product comes in contact with eyes: • Flush eyes thoroughly with cool running water for several minutes. • If irritation persists, seek for medical attention.
Ingestion	• No effects are expected for ingestion of small amounts. May be a choking hazard. If in doubt, seek for medical attention.

SECTION 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Foam, dry chemical powder, carbon dioxide (CO_2) or water spray.
Unsuitable extinguishing media	Do not use a solid water stream as it may cause scattering and spreading of fire.

5.2 Physiochemical hazards arising from the chemical

1. Keep away from heat and sources of ignition.
2. Combustible particulate solid may decompose under fire conditions.
3. Heat from fire may melt, decompose polymer, and generate flammable vapours.
4. In case of fire, hazardous thermal decomposition products may be produced such as carbon monoxide, carbon dioxide, hydrocarbons, dense black smoke and soot.
5. The formation of hydrocarbons, aldehydes or ketones is possible in the initial stages of a fire (particularly in between 400 ^{o}C and 700 ^{o}C).

5.3 Advice for fire-fighters

Special protective equipment for fire-fighters	• Wear approved positive pressure self-contained breathing apparatus (SCBA), protective firefighting clothes and heat resistance protective gloves.
Special firefighting procedures	• Standard procedures for Class A fires.
Other information	• May re-ignite after fire is extinguished.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	• Potential combustible dust hazard. • Avoid generating dust. • Potential slipping hazard on smooth surface. • Equip with proper personal protective equipment (PPE) – heat resistance protective glove.
Environmental precautions	• Prevent from entering drain or sewer system.
Methods and materials for containment and cleaning	• Good housekeeping must be maintained to avoid potential slippery hazard. • Sweep up spilled material into suitable disposal containers to avoid ignition risk. • In case of molten resin spillage, cool it down using water and dispose accordingly.

SECTION 7. Handling and storage

Precautions for safe handling	• Handle in accordance with proper safety practices. • Ensure good ventilation at the workplace. • Any unavoidable deposit of dust must be regularly removed. • Avoid inhalation of fumes and vapours during processing. • Keep away from sparks and open fire. • Electrostatic charge may build up during handling hence the equipment should be grounded and bonded.
Conditions for safe storage	• Store in dry, cool and well-ventilated conditions at temperatures below 60˚C (140˚F) and protect from direct UV light.
Incompatible materials	• Strong oxidizing agents.

SECTION 8. Exposure controls and personal protection

8.1 Control parameters

8.1.1 Exposure monitoring

Ingredients	CAS No.	Limit Value	Reference
Nuisance dust	N/A	10 mg/m^3 8h TWA (Inhalable particles) 3 mg/m^3 8h TWA (Respirable particles)	USA ACGIH
Limits for hazardous decomposition products			
Carbon monoxide	630-08-0	35 mg/m^3 8h TWA	UK HSE
Carbon dioxide	124-38-9	9150 mg/m^3 8h TWA	UK HSE
Acrylaldehyde (Acrolein)	107-02-8	0.23 mg/m^3 8h TWA	UK HSE
Formaldehyde	50-00-0	2.5 mg/m^3 8h TWA	UK HSE

Consult local authorities for acceptable exposure limits.

8.2 Engineering controls

Engineering controls	• Use in well-ventilated area. • Extruder should be properly vented.

8.3 Individual protection measures

8.3.1 Personal protective equipment



Eye / face protection	• Use safety glasses / goggles.
Skin and body protection	• Wear suitable protecting clothes with long sleeve.
Hand protection	• Wear heat resistance protective gloves when necessary.
Respiratory protection	• No respiratory protection is required. In case of insufficient ventilation, wear suitable respiratory equipment.
Hygiene measures	• Always maintain good personal hygiene practice such as wash hand after handling the material and before eating, drinking or smoking. • Take off contaminated clothing and wash it before reuse.

SECTION 9. Physical and chemical properties

Physical appearance	• Pellets
Physical state	• Solid
Colour	• Translucent to white
Odour	• Mild to no odour
Odour threshold	• No data available
pH	• Not applicable
Melting point	• > 100˚C (212˚F)
Boiling point	• Not applicable
Flash point	• No data available
Evaporation rate	• Not applicable
Flammability (solid)	• Polymer will burn but does not easily ignite
Lower explosive limit	• Not applicable
Upper explosive limit	• Not applicable
Vapour pressure @ 20˚C (68˚F)	• Not applicable
Vapour density	• Not applicable
Relative density / Specific gravity	• 0.900 to 0.935
Water solubility	• Insoluble
Partition coefficient: n-octanol/water	• No data available
Auto-ignition temperature	• > 357˚C (674.6˚F) estimated
Decomposition temperature	• No data available
Kinematic viscosity	• Not applicable
Dynamic viscosity	• Not applicable

SECTION 10. Stability and reactivity

Reactivity	• No known dangerous reaction under normal conditions.
Chemical stability	• Stable under normal conditions.
Possibility of hazardous reactions	• Will not occur.
Conditions to avoid	• Heat, direct sunlight, temperatures above 357˚C (674.6˚F) • Open flame • Sparks
Incompatible materials	• Strong oxidizing agents.
Hazardous decomposition products	• Not expected to decompose under normal conditions
Thermal decomposition products	• Carbon dioxide, carbon monoxide, organic vapours, hydrocarbons (ketones and aldehydes), dense black smoke and soot.

SECTION 11. Toxicological information

Acute oral toxicity	• Not classified Oral (rat) LD50: > 2000 mg/kg
Acute dermal toxicity	• Not classified Draize Index = 0.0
Acute inhalation toxicity	• Not classified Inhalation (mouse) ATE: 12 mg/L
Skin corrosion / irritation	• Not classified Draize Index = 0.0
Serious eye damage / eye irritation	• No data available
Respiratory sensitization	• No data available
Skin sensitization	• Not classified
Germ cell mutagenicity	• Not classified
Carcinogenicity	• Not classified IARC Group 3 - Not classifiable
Reproductive toxicity	• No data available
Specific target organ toxicity - single exposure	• No data available
Specific target organ toxicity - repeated exposure	• No data available
Aspiration hazard	• No data available

SECTION 12. Ecological information

12.1 Ecotoxicity

Acute aquatic toxicity	• Not classified
Chronic aquatic toxicity	• Not classified

12.2 Persistence and degradability

Biodegradability	• Not readily biodegradable

12.3 Bioaccumulative potential

Bioaccumulation	• Not expected to be bioaccumulative

12.4 Mobility in soil

Mobility	• Low mobility

12.5 Other adverse effects

The ecotoxicity impact is expected to be minimal based on the low water solubility of polymers. Material is in pellet form. Birds, fish and other wildlife may eat pellets which may obstruct their intestinal tracts.

SECTION 13. Disposal information

13.1 Waste disposal methods

13.1.1 Waste residues

Recycle the material as far as possible. Incineration or landfill of waste material in a permitted facility in accordance with Environmental Quality Act 1974 and relevant regulations under the Act is recommended.

This product is not listed under United States Environmental Protection Agency (US EPA) hazardous waste regulations, 40 CFR 261.33 paragraphs (a) or (f), i.e. chemical products that are considered hazardous if they become wastes. It does not exhibit any of the hazardous characteristics listed in 40 CFR 261 Subpart C.

13.1.2 Contaminated packaging

Empty the remaining contents. Dispose as unused product. Do not reuse empty packaging. Recycle the packaging in accordance with applicable regulations and material characteristic.

SECTION 14. Transportation information

This material is not regulated as dangerous goods for transportation under UNRTDG 2009 (*Sixteenth revised edition*).

UN number	• Not applicable
UN proper shipping name	• Not applicable
Transport hazard classes	• Not applicable
Packing group	• Not applicable
Marine pollutant	• Not applicable
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC code)	• Not applicable
DOT classification for bulk shipments (non-bulk shipments may differ)	• Not classified
DOT proper shipping name	• Not applicable
USCG proper shipping name	• Polyethylene
ADR / RID classification	• Not classified
IMO / IMDG classification	• Not classified
ICAO / IATA classification	• Not classified
Hazchem / Emergency Action Code	• Not applicable

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations specific for the hazardous chemical in question

15.1.1 Local regulations

Occupational Safety and Health Act 1994	• Not listed
Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013	• Not listed
Environmental Quality Act 1974	• Not listed

15.1.2 International agreements

Montreal Protocol (Ozone Depleting Substances)	• Not listed
Stockholm Convention (Persistent Organic Pollutants)	• Not listed
Rotterdam Convention (Prior Informed Consent)	• Not listed
Basel Convention (Hazardous Waste)	• Not listed

15.2 Global inventory status

Country / Region	Inventory	Status
Australia	AICS	• Compliant
Canada	DSL	• Compliant
China	IECSC	• Compliant
Europe	REACH	• Compliant
Japan	ENCS	• Compliant
Korea	KECI	• Compliant
New Zealand	NZIoC	• Compliant
Philippines	PICCS	• Compliant
United States of America	TSCA	• Compliant
Taiwan	TCSCA	• Compliant

Please visit www.lottechem.my to download the product regulatory compliance statement.
For enquiry, please contact our Technical Service Department.

SECTION 16. Other information

Revision

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Revised section(s): 1 to 16. Compliance with CLASS Regulations 2013 [P.U. (A) 310/2013].

References

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10. Recommendations on the Transport of Dangerous Goods – Model Regulations Volume 1. 2009. 16th ed. United Nations.

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