# SAFETY DATA SHEET

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

# Lotte Chemical Titan Titanex® HDPE

Titanex® HB0972

Version 1.4 Revision Date: 12 July 2018

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

### 1.1 Product identifier

| | |
|---|---|
| Trade name | Titanex® High Density Polyethylene |
| Product grade | Titanex® HB0972 |

### 1.2 Other means of identification

| | |
|---|---|
| Substance name | High density polyethylene |
| Synonyms | Ethylene-1-hexene copolymer |

### 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: 8899 (Office hours only)<br>Ext: 3349 (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-1-hexene copolymer | 25213 – 02 – 9 | > 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:<br>• Quickly remove exposed individual to open area with fresh air available.<br>• If symptoms persist, seek for medical attention. |
| Skin contact | ➢ In case of contact with molten resin:<br>• Immediately flush with large amounts of cool running water to cool the affected area.<br>• **DO NOT** attempt to remove the molten resin from the skin.<br>• **DO NOT** pull away clothing which has adhered to the skin as this can cause further injury.<br>• Obtain immediate medical attention if burn is deep. |
| Eye contact | ➢ If this product comes in contact with eyes:<br>• Flush eyes thoroughly with cool running water for several minutes.<br>• 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.<br>• Avoid generating dust.<br>• Potential slipping hazard on smooth surface.<br>• 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.<br>• Sweep up spilled material into suitable disposal containers to avoid ignition risk.<br>• 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.<br>• Ensure good ventilation at the workplace.<br>• Any unavoidable deposit of dust must be regularly removed.<br>• Avoid inhalation of fumes and vapours during processing.<br>• Keep away from sparks and open fire.<br>• 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)<br>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.<br>• 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.<br>• 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 | • > 120˚C (248˚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 | • 0.940 to 0.965 |
| 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)<br>• Open flame<br>• 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<br>Oral (rat) LD50: > 2000 mg/kg |
| Acute dermal toxicity | • Not classified<br>Draize Index = 0.0 |
| Acute inhalation toxicity | • Not classified<br>Inhalation (mouse) ATE: 12 mg/L |
| Skin corrosion / irritation | • Not classified<br>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<br>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

Date of issue / revision: 12 July 2018
Version: 1.4
Revised section(s): 1.5 New emergency telephone number

### References


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4. Bergfeld et al. 2014. "Cosmetic Ingredient Review; Safety Assessment of Polyene Group as Used in Cosmetics." *International Journal of Toxicology* 26 (suppl. 1): 115-127.
5. "Polyethylene." 2008. ChemIDPlus. The National Library of Medicine (US NLM).
6. "List of Classifications, Volume 1-116." 1987. IARC Monographs Programme on the Evaluation of Carcinogenic Risk to Humans. International Agency for Research on Cancer - World Health Organization.
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8. Ndon, U. J., A.D. Levine, B. S. Bradley. 1992. "Evaluation of Biodegradability of Starch-Based Plastics." *Water Science & Technology* 74(1): 2089-2092.
9. "The Montreal Protocol on Substances that Deplete the Ozone Layer." 2000. United Nations Environment Programme.
10. Recommendations on the Transport of Dangerous Goods – Model Regulations Volume 1. 2009. 16th ed. United Nations.

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