



MATERIAL SAFETY DATA SHEET

LOTTE CHEMICAL TITAN (M) SDN. BHD.

(Company No. 154990W)

(Formerly known as Titan Petchem (M) Sdn. Bhd.)

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ISSUE NO. : 1

MATERIAL GRADE: TITANEX HDPE

I. PRODUCT IDENTIFICATION

Product Group: High Density Polyethylene with content of less than 1 % additives.

II. COMPOSITION AND PHYSICAL DATA

Base Resin: Ethylene-Hexene / Ethylene-Butene Copolymer.

TSCA Registry: CAS # 9002-88-4.

III. HAZARDS IDENTIFICATION

These products should not be considered as hazardous materials as our own interpretation of the U.S. Occupational Safety and Health Act and Regulations, including the Hazard Communication Standard 29 CFR 1910.1200 dated November 25, 1983.

| <u>Hazardous Material Identification System</u> | <u>Rating</u> |
|---|---------------|
| Health Hazard: | 0 Minimal |
| Flammability hazard | 1 Slight |
| Reactivity hazard | 0 Minimal |

IV. FIRST AID MEASURES

Molten resins: If molten material comes into contact with the skin, immerse skin under a running stream of water until cooled. **DO NOT** attempt to remove the resin from the skin. Removal can result in tissue damage. Get immediate medical attention.

V. FIRE FIGHTING MEASURES

| | |
|-----------------------------------|---|
| Autoignition temperature: | > 357° C estimated. |
| Flash point: | 260°C approx. |
| Flammable limit: | N/A* |
| Extinguishing media: | Water spray, dry chemical, foam or carbon dioxide |
| Special fire-fighting procedures: | Standard procedures for class A fires |
| Unusual fire & explosion hazard: | None |
| Stability considerations: | Stable |

*N/A: not applicable

VI. ACCIDENTAL RELEASE MEASURES

Spill and leak procedures: Sweep up spilled material for use or disposal. Good housekeeping must be maintained to avoid potential slipping problem.

CAUTION: Keep walking surfaces free of spilled material to avoid a slipping hazard.

VII. HANDLING AND STORAGE

Handling and storage precautions: Keep away from sparks and open flame. This product may react with strong oxidising agents and should not be stored near such materials. Store in sprinkled warehouse. Keep temperature below 60°C (140°F) for quality control.

Protective measures during repair & maintenance: Eliminate ignition source.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment: Safety glasses
 Work practices: Eyewash fountains and safety showers should be easily accessible.
 Engineering controls: Provide adequate ventilation. Extruder should be properly vented.

IX. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|------------------------|---|----------------------|----------------|
| Physical state: | Solid pellets | % volatile (vol.): | < 0.4 |
| Molecular formula: | (C ₂ H ₄) _x | Melting point: | > 120°C |
| Boiling point: | N/A* | Solubility in water: | Negligible |
| Vapor pressure @ 20°C: | N/A* | Specific gravity: | 0.940 to 0.965 |
| Vapor density: | N/A* | pH: | N/A* |
| | | Evaporation rate: | N/A* |

*N/A: not applicable

X. STABILITY AND REACTIVITY

| | |
|---------------------------|--|
| Stability: | Stable |
| Conditions to avoid: | Temperatures above 300°C |
| Materials to avoid: | Strong oxidising agents |
| Decomposition products: | Carbon dioxide, carbon monoxide and organic vapors |
| Hazardous polymerization: | Will not occur |

XI. TOXICOLOGICAL INFORMATION

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|----------------------------|--|
| Toxicity to Animals (rat): | LD50: > 3000 mg/kg LC50: 12000 mg/m ³ /30m |
| Chronic Effects on Humans: | CARCINOGENIC EFFECTS: Classified NONE by NTP, NONE by OSHA; group 3 (not classifiable for human.) by IARC. |

XII. ECOLOGICAL INFORMATION

| | |
|---|---------------|
| Ecotoxicity: | Not available |
| BOD5 and COD: | Not available |
| Biodegradable/OECD: | Not available |
| Mobility | Not available |
| Toxicity of the products Of biodegradation: | Not available |
| Special remarks on the Products of biodegradation: | Not available |

XIII. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incineration of waste material in a permitted facility in accordance to local, state, and federal regulation is the recommended disposal method. Landfilling in a licensed facility in accordance to local, state and federal regulation is a suitable alternative.

This product is not listed in federal hazardous waste regulations 40CFR 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. State or local hazardous waste regulation may apply if different from the federal.

XIV. TRANSPORT INFORMATION

| | |
|--|---|
| DOT Classification for Bulk Shipments (non bulk shipments may differ): | Not a DOT controlled material (United States) |
| DOT Proper Shipping Name: | Not applicable |
| UN Number: | Not applicable |
| Packing Group: | Not applicable |
| USCG Proper Shipping Name: | Polyethylene |
| Marine Pollutant: | Not available |
| Hazardous Substances Reportable Quantity: | Not available |
| Special Provisions for transport: | Not applicable |
| TDG Classification: | Not controlled under TDG (Canada) |
| ADR/RID Classification: | Not controlled under ADR (Europe) |
| IMO/IMDG Classification: | Not controlled under IMDG |
| ICAO/IATA Classification: | Not controlled under IATA |

XV. REGULATORY INFORMATION

Designation according to EC guidelines:
The material is not subject to classification according to EC lists and other sources of literature known to us.
Observe the normal safety regulations when handling chemicals.
Generally all national regulations regarding this product type apply .

XVI. OTHER INFORMATION

The information supplied has been based upon the current level of information available, for the purpose of specifying the requirements regarding environment, health and safety in conjunction with the product. They are not to be interpreted as a warranty for specific product characteristics.

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