



MATERIAL SAFETY DATA SHEET (MSDS)

MAH-GRAFTED LLDPE GRADE MAH 10

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1	Product	GRAFTED COMPOUND GRADE MAH 10
1.2	Generic Description:	Maliec anhydride-grafted polyethylene
1.3	Physical Form:	Pellet
1.4	Color:	White
1.5	Odor:	Irritating
1.6	IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY	
	Manufacturer:	PLEXCHEM TECHNOLOGIES PTE LTD
	Address:	No.8 Penjuru Place #01-39, 2-8 Penjuru Tech Hub, Singapore 608780
	Telephone:	Tel: +65 62640288 Fax: +65 67958854

2. HAZARDS IDENTIFICATION

Potential Health Effects

Eyes : Resin particles, like other inert materials, are mechanically irritating to eyes.

Ingestion : Is not considered a potential route of exposure.

Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS-No.</u>	<u>Concentration</u>
Ethylene copolymer	N/A	>99%

4. FIRST AID MEASURES

First Aid:

4.1 Skin contact: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. The material is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. Cool skin rapidly with cold water after contact with molten material. Do not attempt to remove material from the skin. Obtain medical treatment for thermal burn.

4.2 Eye contact: In case of contact, immediately flush eyes with plenty of water for at least

5. FIRE FIGHTING MEASURES

Flammable Properties

- 5.1 Flash point: No data available
- 5.2 Autoignition temperature: ca. 350 °C (662 °F)
- 5.3 Fire and Explosion Hazard : Material in pellet form may accumulate static charge when poured from one container to another. Failure or malfunction of temperature control systems on processing equipment, such as extruders, may create explosion hazards. Molten polyethylene tends to flow or drip and will propagate fire.
- 5.4 Suitable extinguishing media : Water, Foam, Dry chemical, Carbon dioxide (CO₂)
- 5.5 Firefighting Instructions : Wear self-contained breathing apparatus (SCBA). The solid polymer can only be burned with difficulty. Evacuate personnel and keep upwind of fire. Grounding and elimination of the static charge is recommended.

6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with cleanup. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Cleanup : **Shovel or sweep up.**

Accidental Release Do not discharge to streams, ponds, lakes or sewers.

7. HANDLING AND STORAGE

Handling (Personnel): Before using, read the product bulletin.
Handling (Physical Aspects): When opening containers, avoid breathing vapours that may be emanating.
Storage: Keep containers dry and tightly closed to avoid moisture absorption and contamination. Store in a cool, dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: See Bulletin "Proper Use of Local Exhaust Ventilation During Processing of Plastics". When hot processing this material, use local and/or general exhaust ventilation to maintain the concentration of vapors and fumes below exposure limits. Use static controls. Static charges can cause explosions in solvent and dust laden atmospheres.

Personal protective equipment

Respiratory protection: A respiratory protection program that meets country requirements must be followed whenever workplace conditions warrant respirator use. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

Consult the OSHA respiratory protection information located at 29CFR 1910.134.

Hand protection: Additional protection: Protective gloves

Eye protection: Wear safety glasses with side shields. Wear tightly fitting chemical splash goggles and face shield when possibility exists for eye and face contact due to spattering or splashing of molten material.

Skin and body protection: Where there is potential for skin contact, have available and wear as appropriate, impervious gloves, apron, pants, jacket, hood and boots. If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear.

Dust (inhalable and respirable fraction)

PEL: (OSHA)	5 mg/m3	8 hr. TWA Respirable fraction.
	Remarks	All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.

PEL: (OSHA)	15 mg/m3	8 hr. TWA Total dust.
TLV (ACGIH)	10 mg/m3	TWA Inhalable particles.
TLV (ACGIH)	3 mg/m3	TWA Respirable particles.

Maleic anhydride

PEL: (OSHA)	0.25 ppm	1 mg/m3	8 hr. TWA
PEL: (OSHA)	0.25 ppm	1 mg/m3	8 hr. TWA
TLV (ACGIH)	0.1 ppm	TWA	
TLV (ACGIH)	0.01 mg/m3	TWA	
AEL* (DUPONT)	0.1 ppm	8 & 12 hr. TWA	

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: pellets
Color: white
Odor: irritating
Melting point/range: 130 °C (266 °F)
Specific gravity: < 1

Note: The above information is not intended for use in preparing product specifications. Contact us before writing specifications.

10. STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Conditions to avoid: Temperature > 290 °C (> 554 °F)

Abnormally long processing time or high temperatures can produce irritating and toxic fumes. Decomposes on heating

Incompatibility: strong oxidants at high temperatures

Hazardous decomposition products: Decomposition is a function of both processing temperature and time at that temperature. Decomposition can occur below the recommended processing temperature limit. At temperatures above the "conditions to avoid" temperature, thermal decomposition of the resin becomes rapid. Hazardous decomposition products: Alcohols, Carbon monoxide, Hydrocarbons, Acrolein, carbon dioxide, Aldehydes

Hazardous reactions: Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

MAH Grafted GRADE MAH 10

Further information: No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Additional ecological information :

No data is available on the product itself. Toxicity is expected to be low based on insolubility in water.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Preferred options for disposal are recycling, incineration with energy recovery, and landfill. The high fuel value of this product makes incineration very desirable for material that cannot be recycled. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

TSCA Status : In compliance with TSCA Inventory requirements for commercial purposes.

NZ HSNO Status : Exempt

SARA 313 Regulated Chemical(s): SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65 : Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

PA Right to Know : Substances on the Pennsylvania Hazardous Substances List present

Regulated Chemical(s): at a concentration of 1% or more (0.01% for Special Hazardous substances): None known.

N J Right to Know Regulated Chemical(s): Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): None known.

16. OTHER INFORMATION

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

THE DATA IN THIS MATERIAL SAFETY DATA SHEET RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN AND DOES NOT RELATE TO USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PROCESS.

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