



MATERIAL SAFETY DATA SHEET

Revision Date: 6/17/2009

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Epolene® Maleated Polyethylene Polymer

Product Grade Designations: C-26

Manufacturer/Supplier:

Westlake Polymers LLC
2801 Post Oak Blvd.
Houston, TX 77056
US

MSDS Prepared by Product Regulatory Compliance / Health Safety & Environmental

Chemical Name : Ethylene – maleic anhydride copolymer

Synonym(s) : Maleated Polyethylene, Maleated LLDPE,

Product Use : plastics, wax, adhesives

OSHA Status non-hazardous

For emergency information, telephone CHEMTREC at 800-424-9300.

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Weight %</u>	<u>Component</u>	<u>CAS Registry No.</u>	<u>Class</u>	<u>Risk</u>
>99%	maleated polyethylene	25213-02-9		
<0.2	antioxidants	proprietary	not classified	
<0.05	maleic anhydride	108-31-6	Xn, C	R22, R34, R42/43

3. HAZARDS IDENTIFICATION

HMIS® Hazard Ratings: Health - 1, Flammability -1, Chemical Reactivity – 0

HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

WARNING: AT ELEVATED TEMPERATURES VAPORS MAY CAUSE IRRITATION TO THE EYES AND RESPIRATORY TRACT AND/OR ALLERGIC RESPIRATORY REACTIONS.

MOLTEN MATERIAL WILL PRODUCE THERMAL BURNS.

AVOID DIRECT REPEATED EXPOSURE TO SKIN.

Exposure Limit: as Nuisance dust, 15.0 mg/m³, OSHA; Dust accumulation may acquire a static charge which could ignite the combustible particles. See section 7.

Inhalation: Not a hazard at ambient temperatures; vapors, fumes, or sprays which can form at elevated temperatures are irritants to the eyes and respiratory tract and may in some persons cause allergic respiratory reactions. Fine dust may cause respiratory tract irritation.

Eyes: Fine dust may scratch eye surface; vapors, fumes, or sprays which form at elevated temperatures can be irritants.

Skin: Contact with molten material will cause thermal burns; Avoid repeated exposure to skin.

Ingestion: Not a normal exposure route; no data is available; adverse reaction is not expected.

4. FIRST- AID MEASURES

Inhalation: If overcome by dust or vapors, move to fresh air. Get medical attention if symptoms persist.

Eyes: If dust or molten material contacts the eye, immediately flush with plenty of water for at least 15 minutes. If irritation persists, get medical attention immediately.

Skin: For thermal burns, flush or submerge effected area in cold water to dissipate heat. Cover with clean bandage material. Do not peel material from skin. Get medical attention. For contact at ambient temperatures, wash with soap and water.

Ingestion: Seek medical advice.

Note to Physicians: Burns should be treated as thermal burns. The material will come off as healing occurs; therefore, immediate removal from the skin is not necessary.

5. FIRE FIGHTING MEASURES

Extinguishing Media: water fog, dry chemical, foam, carbon dioxide

Special Fire-Fighting Procedures: Water spray to cool fire exposed surfaces. Wear self-contained breathing apparatus and protective clothing to enter area.

Hazardous Combustion Products: carbon dioxide, carbon monoxide, formaldehyde, acetaldehyde, other low molecular weight organic alcohols, aldehydes, methyl ketones, carboxylic acids and irritating smoke.

General Fire and Explosion Hazards: Solid product will burn at or above the flash point. Oxygen lean conditions may produce toxic gases, acrid fumes, irritating smoke. Product may accumulate a static charge which could result in an electrical discharge that could ignite polymer dust.

6. ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment. Sweep or shovel up, place in a container for salvage or disposal as chemical waste.

For Large Spills: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams.

7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid skin contact and contact with molten material; do not breathe fumes, vapors, dust or sprays from molten or burning material. When processing at > 573°F (300°C), consider use of a respirator to avoid breathing decomposition products. Use only with adequate ventilation.

Prevention of Fire and Explosion: Keep from contact with incompatible materials. Minimize dust generation and accumulation. Because product may accumulate a static charge, use proper bonding and/or grounding procedures prior to transfer. In the United States of America, refer to NFPA® Pamphlet No. 654, "Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids."

Storage: Keep container closed and in ventilated area, away from ignition sources, heat, open flames, and direct sunlight. Do not store with incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure: Nuisance dust : TLV: 10 mg/m³ (ACGIH)

Maleic Anhydride

TWA: 0.1ppm (ACGIH)

REL: 0.25 ppm, 1 mg/m³ (NIOSH –Pocket Guide to Chemical Hazards)

PEL: 0.25 ppm, 1 mg/m³ (OSHA – 29CFR1910.1000 Table Z-1, Limits for Air Contaminants)

TWA PEL: 0.25 ppm, 1 mg/m³ (California Code of Regulations, Title 8, Sec 5155)

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory and eye protection may be needed in special circumstances; such as, poorly ventilated spaces, very hot processing, evaporation of liquids from large surfaces, spraying of mists, mechanical generation of dusts, drying of solids, etc.

Respiratory Protection: If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134. Respirator type: dust, organic vapor.

Eye Protection: Wear goggles or a face shield when working with molten material or when dust is generated.

Skin Protection: Wear thermally resistant gloves and clothing appropriate to prevent contact with skin when handling molten product. Wear chemically resistant gloves and clothing appropriate to prevent contact with skin when handling product at ambient temperatures.

Recommended Decontamination Facilities: eye bath, washing facilities

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: solid

Color: whitish

Odor: slight to mild

Odor Threshold: 0.32 ppm – for maleic anhydride

Specific Gravity: 0.91 – 0.92 (@ 25°C)

Softening point: 115°C (239°F) – 126°C (259°F) (RBSP, ASTM E-28)

Solubility in Water: negligible

Flash Point: not applicable, combustible solid

Thermal Decomposition Temperature: Thermal stability not tested for each grade, degradation in air may begin at > 300°C (573°F). Low stability hazard expected at normal operating temperatures.

10. STABILITY AND REACTIVITY

Stability: Product as delivered is stable. Product will decompose with temperatures above 300°C (573°F), see Section 7.

Hazardous Decomposition Products: carbon dioxide, carbon monoxide, formaldehyde, acetaldehyde, other low molecular weight organic alcohols, aldehydes, methyl ketones, carboxylic acids.

Incompatibility: Product reacts with strong oxidizing agents, fluorine.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Inhalation General: Prolonged or repeated exposure to smoke or fumes generated by heating this product may cause respiratory sensitization.

Maleic anhydride is corrosive to the skin and eyes.

No acute toxicity effects are known.

12. ECOLOGICAL INFORMATION

This product has not been tested for environmental effects. Do not discharge to sewers or waterways.

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate or landfill in accordance with local regulations.

Emptied containers may retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

DOT (USA): Class not regulated

Sea - IMDG (International Maritime Dangerous Goods): Class not regulated

Air - ICAO (International Civil Aviation Organization): Class not regulated

15. REGULATORY INFORMATION

Note: Information listed in this Section is not meant to be comprehensive, but represents frequently requested information.

TSCA (US Toxic Substances Control Act), Sec 8(b): This product is listed on the TSCA inventory.

TSCA, Sec 12(b): This product does not contain substances subject to reporting

WHMIS (Canada) Status: non-controlled

SARA Title III: In accordance with the provisions of Title III, Sections 311 & 312 of the **Superfund Amendments and Reauthorization Act**, this product contains trace levels of a chemical (maleic anhydride) classifiable as immediate (acute) health hazard. This product does not contain Section 313 reportable Ingredients.

California Prop 65: In compliance, no reportable substances.

CONEG: This product is in compliance with the heavy metals requirements of the **Coalition of Northeastern Governors**, California Toxics in Packaging Prevention Act (AB2021), and, the EU directive 94/62/EC.

Ozone Depleting Substances: none reportable, in compliance with 40 CFR 82.

Carcinogenicity Classification (components present at 0.1% or more): none, unless listed below:

European Hazardous Chemicals: none reportable, in compliance with 67/548/EEC, 76/769/EEC, 1999/45/EC, 2002/95/EC (RoHS), 2002/96/EC (WEEE) This polymer is not dangerous according to the EC Directives.

DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act):

This product is listed on the DSL.

EINECS (European Inventory of Existing Commercial Chemical Substances): This product complies with EINECS requirements. The polymers are exempt from listing; the monomers, ethylene and maleic anhydride, are EINECS listed. All additives used in the formulation of this polymer are EINECS listed.

AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): This product is listed on AICS or otherwise complies with NICNAS.

ENCS, ISHL, MITI (Japan Chemical Substance Inventories): This product is listed in the Handbook or have been approved in Japan by new substance notification.

ECL (Korean Toxic Substances Control Act): This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act.

16. OTHER INFORMATION

For other information, contact Westlake Polymers LLC Customer Service 1-800-545-9577 (Monday-Friday, 7:30am-5:00pm - central standard time)

It is your responsibility to determine that our product is safe, lawful, and technically suitable for your intended uses. This material safety data sheet cannot cover all possible situations which the user may experience during processing. Each aspect of the user's operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this material safety data sheet should be provided to employees and/or customers. Westlake Polymers LLC must rely on the user to use this information to develop appropriate work practice guidelines and employee instructional programs specific to the user's operation.

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