

SAFETY DATA SHEET

(In accordance with 4th revised edition of GHS)

POLYETHYLENE HOMOPOLYMERS (Micronized)

ID: MOC-GHS-SDS-MPH-002

SECTION 01 :: IDENTIFICATION

| | | |
|-------------------------------------|---|--|
| PRODUCT NAME | : | MARCUS 5005, MARCUS 5010, |
| PRODUCT CODE | : | M 5005, M 5010, |
| CHEMICAL NAME & SYNONYMS | : | Micronized Polyethylene Homopolymer, PE Wax. |
| PRODUCT USE | : | Used as High performance additives as a flattening agent, suspending agent etc. for multiple uses in many applications and emulsion in aqueous alkali as "stir-in" products. |
| MANUFACTURERS | : | MARCUS OIL & CHEMICAL 14549, Minetta (77035), P O-Drawer 450267, Houston-TX 77245, USA, Ph: (800) 713 721 9131 www.marcusoil.com |
| IN CASE OF EMERGENCY CALL | : | CHEMTREC (USA): 800 424 930; MOC (24Hrs.) : (800) 713 721 9131 |

SECTION 02 :: HAZARDS IDENTIFICATION

| | |
|--------------------------------------|---|
| Regulation (EC) No 1272/2008: | This product is not classified as dangerous according to Regulation (EC) No 1272/2008. |
| Directive 67/548/EEC | : This product is not classified as dangerous according to EU Directive 67/548/EEC. |
| Regulation (EC) No 1907/2006: | This product is compiled REACH Regulation (EC) No 1907/2006. Products have low toxicity (acute oral > 2500 mg/kg). Exposure limit for total product (threshold limit value): OSHA regulation 29 CFR 1910.1000 recommended by ACGIH - 5 mgms/m ³ (respirable dust) 10 mgms/m ³ (total dust) |
| GHS | : Not classified |
| Label elements | : Not applicable |
| Other hazards | : May form combustible dust – air mixtures. During processing dust may form explosive mixture in air. Static charges on powders or powders in liquids may ignite combustible atmospheres. Product dust may be irritating to eyes, skin and respiratory system. Thermal decomposition can lead to release of irritating gases and vapors. The molten product can cause serious burns. |
| Static Electricity | : Electrostatic charges of non-conductive materials is a natural phenomenon ranging from harmless to a nuisance to a hazard depending on the degree of charging and the environment where the discharge takes place. In the case of micronized polymers and waxes, very high levels of static electricity develop in their manufacture, transportation & handling and being poor conductors of electricity, these will hold a static charge for long periods of time. The generation of static electricity cannot be prevented because its intrinsic origins are present at every particle interface. Hence, a great deal of care should be exercised when handling this type of product in or around flammable liquids, particularly if the liquid is at or near its flashpoint. |

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SECTION 03 :: COMPOSITION / INFORMATION ON INGREDIENTS

| CHEMICAL NAME OF INGREDIENTs | CAS # | EC NUMBER | WEIGHT % |
|------------------------------|-----------|-----------|----------|
| Micronized Polyethylene | 9002-88-4 | Polymer | ~ 100 |

SECTION 04 :: FIRST AID MEASURES

- SKIN EXPOSURE** : If molten material comes in contact with the skin, cool under ice water or a running stream of water. DO NOT attempt to remove the material from the skin. Remove could result in serve tissue damage. Get medical attention.
- EYES EXPOSURE** : Molten wax fumes or dust particles may be slightly irritating to eyes. If molten material should splash into eyes, flush eyes immediately with fresh water for 15 minutes while holding the eyelid open. Remove contact lenses, if worn. Get immediate medical attention.
- INHALATION** : Molten wax fumes may cause mild respiratory irritation. Powder may cause minor nuisance irritation. In that case move the exposed person to fresh air. If breathing is difficult give oxygen. Get medical attention if breathing difficulties continue.
- INGESTION** : Not a probable route of exposure. If person is conscious, rinse mouth with water. Do not induce vomiting unless directed to do so by a physician.
- ADVICE TO PHYSICIAN** : No specific advice other than above. Treat according to symptoms present.

SECTION 05 :: FIRE FIGHTING MEASURES

FLAMMABILITY PROPERTIES:

- Flammability & Classification** : Combustible solid
- Flash Point** : >450oF, Method: ASTM D-92
- Auto Ignition** : Not known
- Temperature** : NA
- Flammability Limits** : Upper: Not applicable Lower: Not applicable

SUITABLE EXTINGUISHING AGENTS: Dry chemical Powder, foam, water fog or carbon dioxide. Avoid using direct streams of water on molten/burning material as product will float and can re-ignite on the surface of the water stream.

HAZARDS DURING FIRE-FIGHTING: Carbon monoxide, carbon dioxide, original monomer other hydrocarbon oxidation products include.

PROTECTIVE EQUIPMENT : Use a mask with universal filler. Use self-contained breathing apparatus approved by NIOSH and full protective clothing.

SPECIAL PRECAUTIONS/INSTRUCTIONS: In powder form, static electricity may lead to explosions. See NFPA Bulletin 654. Watch footing on floors and stairs because of possible melting and spreading of material to become slippery. Use water spray to keep area cool.

SECTION 06 :: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid inhalation and direct contact.

ENVIRONMENTAL PRECAUTIONS: Discharge into the environment must be avoided.

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- CLEANUP** : Collect spilled material using a method that minimizes dust generation (e.g. wet methods, HEPA vacuum). Place waste in an appropriate container for disposal. Use care during clean-up to avoid exposure to the material and injury from broken containers.
- RELEASE RESPONSE** : Use good housekeeping practices since spilled material may be a slipping hazard. When dealing with powdered grade, keep away from heat, flame, and remove ignition sources. Collect material in a drum (may be fiberboard) or carbon using cares to scatter as little dust as possible. May burn although not readily ignitable. Use cautions judgment when cleaning up large molten spills. With small molten spills wear respirator and protective clothing as appropriate. Shut off source of leak if safe to do so. Dike and contain. Allow wax to cool and remove as solid.

SECTION 07 :: HANDLING AND STORAGE

- HANDLING** : Use with adequate ventilation. Avoid breathing fumes from heating process. Avoid contact with eyes and skin. Avoid spillage as floors can become slippery. Accumulations of dust should be removed from settling areas.
- STORAGE CONDITIONS:** Store in a cool, dry, well-ventilated area or silo away from sources of heat, flame and sparks. Ventilate enclosed storage areas, such as trailers and railcars, before entering. Have emergency equipment for fires and spills readily available. Avoid excessive heat. Do not store near strong oxidizing agents and amines.

SECTION 08 :: EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS :

| Component Name | CAS Number | Regulation | Limit | Form |
|--------------------------|------------|------------|----------|------------|
| Polyethylene wax Dust | 9002-88-4 | ACGIH TWA: | 10 mg/m3 | Total Dust |
| | | OSHA PEL: | 5 mg/m3 | |
| | | Italy OEL | 10 mg/m3 | |
| | | Japan OEL | 8 mg/m3 | |

ENGINEERING CONTROLS:

Use adequate ventilation during heating process, or if dusty conditions occur during handling of powdered material. For storage and ordinary handling, general ventilation is adequate.

PERSONAL PROTECTIVE EQUIPMENT:

- Skin Protection** : Wear heat protective gloves and long sleeve clothing if there is potential for contact with heated materials.
- Eye Protection** : Wear safety glasses as minimum protection. Consult you standard operating procedures or safety professional for advice. Use protective eye and face devices that comply ANSI Z87.11-1987.
- Respiratory** : Use a NIOSH approved dust respirator, if dusty conditions prevail. Use an organic vapor respirator when melting or conveying product.

Additional Recommendations : Not generally required.

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SECTION 09 :: PHYSICAL AND CHEMICAL PROPERTIES

Appearance : White, fine particle sized (1-30 microns) powder.
Physical State : Solid.
Odor : Typical mild waxy odor.
Density : 0.92 – 0.96 gm/cc (Test Method – ASTM D-127)
Bulk Density : 300 – 350 kg/m³
Solubility in Water : Negligible
pH : Not applicable.
Boiling Point : Not applicable.
Flash Point : > 500°F (> 260°C)
Melting Point : 82°C -115.5°C (180°F - 240°F)
Vapor Pressure : Not applicable.
Vapor Density : Heavier than Air.
Evaporation Rate : Not applicable.
% Volatiles : Not applicable.

SECTION 10 :: STABILITY AND REACTIVITY

Stability : This material is considered a stable thermoplastic, with no chemical reactivity under normal ambient and anticipated handling conditions of temperature and pressure.
Condition to Avoid : Avoid heating above the recommended processing temperature. DO NOT heat without adequate ventilation. Avoid extreme heat, sparks and open fire.
Material to Avoid : May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. May react with free halogens.
Dangerous decomposition: Small quantities of low molecular weight hydrocarbons, carbon oxides, Carbon monoxide and combustible gases may be formed during thermal processing.
Hazardous polymerization products: Hazardous polymerization will not occur.
Reaction with Air : Does not react with air or other common materials.

SECTION 11 :: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY :

| Chemical name | Route | Species | Acute Toxic Value |
|---------------|------------|---------|----------------------------------|
| Polyethylene | Oral | Rat | LD50> 2500 mg/kg |
| | Inhalation | Mouse | LC50 12000 mg/m ³ /3M |

IRRITATING/CORROSIVE EFFECTS:

Eye Irritation : Dust particles may cause transient irritation from mechanical abrasion.
Skin Irritation : Not expected to cause skin irritation. Molten material may cause thermal burns.
Inhalation : Not a likely route of exposure. Process fumes/dust may cause irritation.
Ingestion : May cause a choking hazard if swallowed.

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OTHER INFORMATIONS :

Carcinogenic Effect : International Agency for Research on Cancer (IARC): Group3
NOT classifiable as to its carcinogenicity to humans.

OTHER DATA : No other data developed.

SECTION 12 :: ECOLOGICAL INFORMATION

- Eco-toxicity :** No relevant studies identified. Ecotoxicity is expected to be low based on the low water solubility of the product.
- Persistence and Degradability:** This material is not expected to be readily biodegradable.
- Bio-accumulative Potential :** Product is not likely to accumulate in biological organisms.
- Mobility in Soil :** This product has not been found to migrate through soils.
- Other adverse effects :** The product does not have any known adverse effects on the environment.

SECTION 13 :: DISPOSAL CONSIDERATION

WASTE DISPOSAL METHOD: Assume conformity with applicable disposal regulations. Preferred method of disposal is in closed containers of sufficient strength to eliminate leakage at approved incineration or chemical landfill waste disposal site in accordance with local regulations. Sewage disposal is discouraged.

RCRA: The unused product is not a RCRA hazardous waste if discarded. Products are organic in nature and not biodegradable. Discard unused material as non-hazardous organic solid waste. Dispose of product in an appropriate facility in compliance with local state and federal regulations.

Is the unused product a RCRA hazardous waste if discarded? No.
If yes, the RCRA ID number is : NA

OTHER DISPOSAL CONSIDERATIONS: Discard as non-hazardous organic solid waste.

The information offered here is for the product as shipped. Use and/or alteration to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

SECTION 14 :: TRANSPORTATION INFORMATION

| Regulatory information | UN number | Class | Packing group | Label | Additional information |
|------------------------|---------------|-------|---------------|-------|------------------------|
| DOT | Not regulated | - | - | - | - |
| ADR / RID | Not regulated | - | - | - | - |
| IMDG CODE | Not regulated | - | - | - | - |
| ICAO / IATA | Not regulated | - | - | - | - |

Special precautions : Keep sealed and secure. Do not expose to heat.

Environmental hazards: Not considered marine pollutant. Also not considered environmentally hazardous.

For additional information on shipping regulations affecting this material, contact the information number found on the first page.

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SECTION 15 :: REGULATORY INFORMATION

US Toxic Substances Control Act : Products are on the TSCA Chemical Inventory.

European Inventory of Existing Commercial Chemical Substances (EINECS) :

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

EU Directives 67/548/EEC, 1999/45/EC and Regulation (EC) No 1272/2008 :

The product is not classified as dangerous for supply according to the Regulation (EC) No 1272/2008 and the EC directive 67/548/EEC and 1999/45/EC.

REACH: The reporting process for the product has been completed in accordance with the appropriate tonnage bands and registration deadlines as per REACH Compliances.

NFPA – USA : Health – 1, Flammability – 1, Reactivity – 0

Canada – WHMIS : This product does not meet WHMIS classification criteria.

Canada – DSL : This product is listed in DSL.

SARA TITLE III: This product is subject to SARA Title III reporting.

- Section 311/312** : Immediate/Acute Health (irritant): YES
- Section 302** : Contains an extremely hazardous substance: NO
- Section 313** : This product does not contain any toxic chemical listed under Sec.313 of the Emergency Planning and Community Right-To-Know Act of 1986.

FDA Status: The products comply with identity specified in 21CFR 172.888 and consequently meet the requirement (subject to the limitations and restrictions which are applicable in specific regulations) of the following:

**21CFR 175.320 21CFR 176.210 21CFR 177.2600 21CFR 175.105 21CFR 176.170 21CFR 177.1200
21CFR 177.200 21CFR 175.125 21CFR 176.180 21CFR 177.1210 21CFR 178.3570 21CFR 175.300
21CFR 176.200 21CFR 177.1520 21CFR 178.3850 21CFR 179.45**

SECTION 16 :: OTHER INFORMATION

MARCUS OIL & CHEMICAL quality assurance program certified by ISO 9001 :: 2008.

Refer to Marcus Oil & Chemical Regulatory Summary Sheet for further regulatory information.

Other useful guides to handling organic powders include:

- NFPA 77** Recommended Practice on Static Electricity.
- NFPA 654** Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids.
- NFPA 499** Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas.
- OSHA 3371-08** Hazard Communication Guidance for Combustible Dusts.

CURRENT ISSUE DATE : 4/2015

PREVIOUS ISSUE DATE : 01/2012

Disclaimer of Liability:

The data set forth in this SDS are typical values (not specifications) based on information provided by the suppliers of the raw materials used in the manufacture of the aforementioned products. Marcus Oil & Chemical makes no warranty with respect to the accuracy of the information provided by their suppliers and disclaims all liability of reliance thereof. Marcus Oil & Chemical warrants only that its products conform to their published specifications and no other express warranty is made with regard thereto. We do not guarantee favorable results and we assume no liability in connection with the use of these products. They are all intended for use by persons having technical skill and knowledge, at their own discretion and risk.

:: END OF DATA SHEET ::