



SAFETY DATA SHEET

Product Name: MTEGRITY™ PP400

Date: 5/15/2014

Revision: 1.0

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	M. Holland Company MTEGRITY™ Homopolymer Polypropylene PP400
Trade Name	Polypropylene
Supplier	M. Holland Company
Synonyms	Polypropylene resin
Chemical Family	Polymer
Product Use	Molded, extruded and fibrous plastic articles

For emergency health, safety and environmental information, call your M. Holland representative, or the M. Holland office at 800-872-7370 (8am – 5 pm Central).

2. HAZARDS IDENTIFICATION

Emergency Overview:

Combustible particulate solids (combustible dust) of sufficiently small particle size when suspended in air in the presence of an ignition source can result in a fire or explosion. Adequate housekeeping and control of ignition sources should be provided. See NFPA 654. Inhalation of vapors from thermal processing may cause irritation to the upper respiratory tract. Molten material may cause thermal burns. Solid particles may cause transient irritation from mechanical abrasion.

This material is NOT HAZARDOUS under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

This is not a dangerous substance according to GHS criteria.

Signal Word:

CAUTION.

Hazards Ratings:

Key: 0 = least, 1 = slight, 2 = moderate, 3 = high, 4 = extreme

	Health	Fire	Reactivity	PPI
NFPA	1	1	0	
HMIS	0	1	0	X

Primary Routes of Exposure:

Skin contact. Eye contact. Inhalation. Ingestion.

Potential Health Effects:

Inhalation: Negligible at room temperature. Inhalation of nuisance dusts, fumes, vapors and smoke from thermal processing may cause irritation to the upper respiratory tract. Symptoms may include burning sensation, coughing and sore throat.

Ingestion: Ingestion is not a likely route of exposure. No effects are expected for ingestion of small amounts. May be a choking hazard. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.



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Skin: No known acute effects of this product resulting from skin contact at room temperature. Prolonged or repeated contact with dusts may be abrasive and mildly irritating to the skin. For heated polymer, skin contact can cause serious thermal burns, which may include pain or feeling of heat, discolorations, swelling and blistering.

Eyes: Dust or contact with pellets may cause mechanical irritation to eye, and is not expected to cause prolonged or significant eye irritation. Eye contact with heated polymer can cause serious thermal burns or blindness. Possible irritation from fumes, vapors or smoke from thermal processing.

Chronic Effects: None known.

Aggravated Medical Conditions: Respiratory disorders.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS #	Percent by weight
Polypropylene	9003-07-0	≥85
Additives	Proprietary	≤15

4. FIRST-AID MEASURES

Eye Contact:

Remove contact lenses, if it can be done safely. Immediately flush eyes with water for at least 20 minutes. Hold eyelids open to ensure adequate flushing. Do not rub the eyes. Get medical attention if irritation develops or if discomfort persists.

Skin Contact:

For contact with polymer at room temperature, remove dusty or contaminated clothing and shoes. Wash affected area with soap and water for a few minutes. If molten material gets on skin, immediately flush with large amounts of water to cool the affected tissue and polymer. DO NOT try to peel the solidified material from the skin, remove contaminated clothing attached to skin or use solvents or thinners to dissolve it. Cover with clean cotton sheeting or gauze. Obtain immediate emergency medical attention if the burn is deep or extensive.

Inhalation:

If symptoms are experienced, move the victim to fresh air. Loosen tight clothing such as a collar, tie, belt or waistband to facilitate breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue to monitor. Get medical attention. Inhalation of smoke following a fire may result in delayed pulmonary edema; seek immediate medical attention.

Ingestion:

First aid not normally required. Dilute swallowed material by drinking water. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Do not give laxatives. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if irritation or other symptoms develop.



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Notes To Physician:

There is no specific antidote; treatment of overexposure should be directed at control of symptoms and the clinical condition of the patient. Treat burns or allergic reactions conventionally after decontamination. Molten resin will come off as healing occurs; therefore, immediate removal from the skin is not necessary. Ingested material should pass through the digestive system without injury. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.

5. FIRE FIGHTING MEASURES

Explosion Hazards:

Accumulated fine dusts may form an explosive mixture with air. Risk of dust-air explosion is increased if flammable vapors are also present. May accumulate hazardous static charge.

Extinguishing Media:

Appropriate Extinguishing Media: Use water spray, foam, dry chemical or carbon dioxide (CO₂), sand or earth to extinguish flames. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Inappropriate Extinguishing Media: Straight streams or jets of water.

Fire Fighting:

Fire Fighting Instructions: Position upwind. Move containers from fire area if you can do so without risk. Fight fire from maximum distance or use unmanned holders or monitor nozzles. Assure an extended cooling down period to prevent re-ignition. Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, full-face, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: This material may burn, but will not ignite readily. Dense smoke is emitted when burned without sufficient oxygen.

Explosion: Avoid generating dust; fine dust dispersed in air in sufficient concentration and in the presence of an ignition source is a potential dust explosion hazard. Fire may produce irritating gases and dense smoke. Flowing material may produce static discharge, igniting dust accumulations.

Hazardous Combustion Products: Combustion may yield carbon monoxide, carbon dioxide, acetaldehyde, acetone, acetic acid, formic acid, formaldehyde and acrolein.

Protective Equipment and Precautions for Firefighters:

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). If protective equipment is not available or not used, fight from a protected location or safe distance.



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6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures:

Isolate area. Keep unnecessary personnel away. Alert stand-by emergency and fire fighting personnel.

Personal Precautions:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (for example, clearing dust surfaces with compressed air). Prevent dust exposure to ignition sources. Use non-sparking tools and prohibit smoking, flares, sparks or flames in the immediate area.

Small Spill and Leak:

Move containers from spill area, if possible. Pellets on the floor could present a serious slipping problem. Vacuum or sweep up material using a method that minimizes dust generation (e.g., wet methods, HEPA vacuum), and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Use care during clean-up to avoid exposure to the material and injury from broken containers.

Large spill and Leak:

Move containers from spill area, if possible. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material using a method that minimizes dust generation (e.g., wet methods, HEPA vacuum), and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Use care during clean-up to avoid exposure to the material and injury from broken containers.

Water Spill:

Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature and (in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

Environmental Precautions:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). For large spills: cover spill with plastic sheet or tarpaulin to minimize spreading. Keep spilled material away from heat, sparks and open flames. Ensure adequate ventilation.



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7. HANDLING AND STORAGE

Handling:

Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Avoid contact with eyes and skin.

There is a risk of being splashed with molten materials. Thermal burns are the most common injury caused while processing molten material. Do not inhale fumes or vapor from molten product. Use with adequate ventilation.

Pneumatic conveying of powder and pellets can generate large static electrical charges. Electrical discharge in the presence of air can cause an explosion. Ground all equipment. High dust concentrations have a potential for combustion or explosion. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Bonding and grounding may not eliminate the hazard for static accumulation. Consult local applicable standards for guidance. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids and EN 61241, Electrical Apparatus for Use in the Presence of Combustible Dust for safe handling.

Follow all Safety Data Sheet/label precautions even after a container is emptied because it may retain product residue.

Storage:

Storage area should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorized personnel. Keep container dry. Keep in a cool place. Ground all equipment containing material. Ventilate enclosed storage areas, such as trailers and railcars, before entering.

Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents. Use appropriate containment to avoid environmental contamination. **DO NOT** enter filled bulk containers and attempt to walk over product, due to risk of slipping and possible suffocation. Use a fall arrest system when working near open bulk containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Supply sufficient



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replacement air to make up for air removed by exhaust systems. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Ensure that eyewash stations and safety showers are in close proximity to work locations.

Hygiene Measures:

Wash hands after handling compounds and before eating, smoking and using the lavatory, and at the end of the day. Take off contaminated clothing and wash before reuse. Discard contaminated clothing and footwear that cannot be cleaned.

Personal Protection:

General: Personal protective equipment (PPE) should not be considered a long-term solution to exposure control. Employer programs to properly select, fit, maintain and train employees to use equipment must accompany PPE. Consult a competent industrial hygiene resource, the PPE manufacturer's recommendation, and/or applicable regulations to determine hazard potential and ensure adequate protection.

Respiratory: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations. The following should be effective types of air-purifying respirators: When dust/mist is present, use a particulate filter. When combinations of vapors, acids, or dusts/mists are present, use an organic vapor cartridge with particulate filter.

Hands: Wear insulated impervious protective gear to protect against the splash of hot product.

Eyes: Splash proof chemical goggles are recommended to protect against the splash of product. Full-face shield is recommended to protect against splash of hot product.

Skin: When handling hot material, wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the heated product. For cold material, no protection is required; however, the use of protective clothing is good industrial practice. Safety footwear with good traction is recommended to help prevent slipping. Static Dissipative (SD) rated footwear is recommended.

Occupational Exposure Limits:

ACGIH: TWA 10 mg/m³ (PNOS, inhalable particulate (8-hr)); 3 mg/m³ (PNOS, respirable particulate (8-hr))

OSHA: TWA 15 mg/m³ (total dust (8-hr)); 5 mg/m³ (respirable fraction (8-hr))

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance:	Solid, white to off-white pellets
Odor:	Odorless to mild
pH:	No data available.
Boiling Point:	No data available.
Melting Point:	120 - 170°C (248 - 338°F)
Specific Gravity:	0.88 – 0.97 (water = 1)
Vapor Pressure:	Negligible
Lower Explosion Limit:	No data available.
Upper Explosion Limit:	No data available.



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Vapor Density:	Not applicable.
Water Solubility:	Insoluble.

10. STABILITY AND REACTIVITY

Stability:

Stable under recommended storage conditions.

Conditions To Avoid:

To avoid thermal decomposition, do not overheat.

Materials To Avoid: Reactive or incompatible with strong oxidizing agents.

Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide, acetaldehyde, acetone, acetic acid, formic acid, formaldehyde and acrolein.

Hazardous Polymerization:

Under normal conditions of storage and use, hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

LD₅₀ Oral: >5000 mg/kg (rat) estimated

LD₅₀ Dermal: >2000 mg/kg (rabbit) estimated

Inhalation: No hazard from the product as supplied.

Eye Contact: No hazard from the product as supplied.

Skin Contact: No hazard from the product as supplied.

Chronic Toxicity:

None.

Carcinogenicity: Polypropylene is classified by IARC as Group 3 (Not Classifiable as to its Carcinogenicity to Humans).

Mutagenic Effects: No relevant information found.

Reproductive Toxicity: No relevant information found.

Developmental Toxicity: No relevant information found.

Target Organ Effects: None under normal use conditions.

Toxicological Data:



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POLYPROPYLENE BASED POLYMERS: Dust may be irritating to the respiratory system. Prolonged and repeated inhalation of dust may cause impaired lung function and lung changes. Vapors and fumes from thermal processing may be irritating to the eyes and respiratory system.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Not expected to be acute toxic to the environment, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

Persistence & Degradability: This water-insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Bioaccumulation: No bioconcentration is expected because of the relative high molecular weight (MW greater than 1000).

Mobility: In the terrestrial environment, material is expected to remain in soil. In the aquatic environment, material is expected to float.

13. DISPOSAL CONSIDERATIONS

Waste Disposal:

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local regulations in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. It is possible that the material as produced contains constituents which are not required to be listed in the Safety Data Sheet but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal spilled material and runoff and contact with soil, waterways, drains and sewers.

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

Disposal should be in accordance with applicable regional, national and local laws and regulations.



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14. TRANSPORT INFORMATION

Special Provisions:

If you reformulate or further process this material, you should consider re-evaluation of the regulatory status of the components listed in the composition section of this Safety Data Sheet, based on final composition of your product.

Proper Shipping Name:

Not listed.

U.S. DOT: This material is NOT REGULATED as a hazardous material or dangerous goods for transportation.

15. REGULATORY INFORMATION

This material is **not hazardous** according to GHS criteria.

International Inventories:

TSCA: All components are listed or exempted from listing.

DSL: All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

U.S. Federal Regulations:

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA): This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories:

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Sudden Release of Pressure Hazard: No

Reactive Hazard: No

CERCLA:

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

WHMIS Hazard Class:

Non-controlled.



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16. OTHER INFORMATION

Follow all Safety Data Sheet/label precautions even after container is emptied because it may retain product residue. Polypropylene has been tested in laboratory rats by subcutaneous implantation of discs or powder. Local sarcomas were induced at the site of implantation. No epidemiological studies or case reports suggest any serious chronic health hazards from long-term exposure to polypropylene decomposition products below the irritation level (IARC, 19, 128).

Reason For Revisions:

1.0 – Initial document creation.

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information. Users should make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials, the safety and health of employees and customers, and the protection of the environment.