SAFETY DATA SHEET

Product Name: MTEGRITY™ ISXXX

Date: 12/12/2024 **Revision:** 5.0

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	M. Holland Company MTEGRITY™ Impact Modified Polystyrene ISXXX
Trade Name	Polystyrene
Supplier	M. Holland Company
Synonyms	Impact Modified Polystyrene, HIPS
Chemical Family	Polymer
Product Use	Petrochemical industry, plastics

This Safety Data Sheet covers all impact polystyrenes sold as M. Holland MTEGRITY™ resin.

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:

Product is a gray, inert solid bead or pellet with slight odor. This product is not considered flammable according to OSHA, but will burn on prolonged exposure to flame or high temperature. Solid particles may cause transient irritation from mechanical abrasion. Dusts and heat-released air emissions may be irritating to the eyes, skin and respiratory system. Molten material may cause thermal burns. At process temperatures irritating fumes may be produced. Dust may form an explosive atmosphere when dispersed in air. Spilled product may create a dangerous slipping hazard. Keep released pellets away from storm sewers and from entry into other aquatic systems.

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

This material is NOT HAZARDOUS 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	0	1	0	
HMIS	0	1	0	

Primary Routes of Exposure:

Skin contact. Eye contact. Inhalation. Ingestion.

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Potential Acute Health Effects:

Inhalation: Negligible at room temperature. Inhalation of fine particles may cause respiratory irritation. Fumes produced during thermal processing may cause irritation to the respiratory system.

Ingestion: Ingestion is not a likely route of exposure. However, ingestion of product may produce mild gastrointestinal irritation and disturbances. May be a choking hazard.

Skin: No known acute effects of this product resulting from skin contact at room temperature. Contact with hot or molten material may cause severe thermal burns. Contact of powder or fines with the skin may cause mild irritation, that is increased by mechanical rubbing or if the skin is dry.

Eyes: Contact with hot or molten material may cause severe thermal injury, including in extreme contact possible blindness. Contact of powder or fines with the eye may cause mechanical irritation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Polystyrene is not listed as a carcinogen by NTP, OSHA, EPA, ACGIH or IARC.

Medical Conditions Aggravated by Overexposure:
No information available.

Overexposure Signs/Symptoms:
No adverse health effects anticipated from the solid pellet.

See Toxicological Information (Section 11)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS #	Percent by weight
Styrene-Butadiene polymer	9003-55-8	≥92
Proprietary additives	Mixture	≤8

Exposure Guidelines: See Section 8 for additional exposure limits.

4. FIRST-AID MEASURES

Eye Contact:
Remove contact lenses, if it can be done safely. Immediately flush eyes with water for at least 15 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 or use solvents or thinners to dissolve it. 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. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if irritation or other symptoms develop.

Notes To Physician:
Burns should be treated as thermal burns. Molten resin will come off as healing occurs; therefore, immediate removal from skin is not necessary. Treatment for overexposure should be directed at controlling the symptoms and clinical condition of the patient. After adequate first aid, no further treatment is necessary, unless symptoms reappear. Ingested material should pass through the digestive system without injury.

5. FIRE FIGHTING MEASURES

General Fire Hazards:
This product is not considered flammable according to OSHA, but will burn on prolonged exposure to flame or high temperature. High concentration of airborne powders or dust may form explosive mixture with air.

Explosion Hazards:
Accumulated fine dusts may form an explosive mixture with air. Take precautionary measures to prevent contact with electrostatic discharges. Risk of dust/air explosion is increased if flammable vapors are present.

Auto-Ignition Temperature: 427°C (800°F)

Flash Points: 345 - 360°C (653 - 680°F) (Combustible Flash Ignition Temperature)

Flammable Limits: Not available.

Extinguishing Media:
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.

Inappropriate Extinguishing Media: High pressure, direct water stream that may spread molten or burning resins.

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. Keep unnecessary personnel away. Fire fighters should wear full-face, self-contained breathing apparatus and thermal protective clothing. Avoid inhaling any smoke and combustion products. Cool containers with flooding quantities of water until well after the fire is

out. Control runoff waters to prevent entry into sewers, drains, underground or confined spaces and waterways.

Unusual Fire Hazards: 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: Styrene, butadiene, carbon dioxide, carbon monoxide.

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:
Stop leak and contain spill. Move containers from spill area, if possible. Pellets on the floor could present a serious slipping problem. Use appropriate tools to put the spilled solid in a designated, labeled waste container. Reuse or recycle where possible. Meet any applicable regulations.

Large spill and Leak:
Move containers from spill area, if possible. Prevent entry into sewers, water courses, basements or confined areas. Use appropriate tools to put the spilled solid in a designated, labeled waste container. Reuse or recycle where possible. Meet any applicable regulations.

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.

Special Procedures:
Contact local police and appropriate emergency telephone numbers. Ensure statutory and regulatory reporting requirements in the applicable jurisdiction are met. Wear appropriate protective and clothing during clean up. Individuals without appropriate protective equipment should be excluded from the area of the spill until cleanup has been completed.

See Section 8 for recommended Personal Protective Equipment and Section 13 for waste disposal considerations.

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.

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.

Handle in contained and properly designed equipment systems. Use with adequate ventilation. Avoid ingestion and inhalation. Keep away from uncontrolled heat and incompatible materials.

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. Adequate security must be provided so that unauthorized personnel do not have access to product/material. Store in grounded, properly designed and approved vessels and away from incompatible materials. Store and use away from heat, sparks, open flame, or any other ignition source. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. 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

General Product Information:
Refer to published exposure limits – utilize effective control measures and PPE to maintain worker exposure to concentrations that are below these limits.

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Supply sufficient 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. Use non-sparking, grounded ventilation systems separate from other exhaust systems. 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 engineering controls and ventilation is not sufficient to prevent build-up of aerosols, vapors or dusts, appropriate NIOSH/MSHA approved air-purifying respirators or self-contained breathing apparatus (SCBA) appropriate for exposure potential should be used. Air supplied breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air purifying respirators.

Skin/Hands/Feet: Use impervious gloves when handling product. Wear safety footwear with good traction to help prevent slipping. Work clothing that sufficiently prevents skin contact should be worn, such as coveralls and/or long sleeves and pants.

Eyes: Wear safety glasses with side shields during normal handling. Use dust goggles if high dust generation is generated. Wear full-face shield during thermal processing if contact with molten material is likely.

Component Exposure Limits:

Ingredient	Basis	Value	Control Parameters	Note
Styrene-Butadiene polymer (9003-55-8)	ACGIH	TWA	10 mg/m^3	Inhalable particles, recommended

Styrene-Butadiene polymer (9003-55-8)	ACGIH	TWA	3 mg/m^3	Respirable particles, recommended
Styrene-Butadiene polymer (9003-55-8)	OSHA	TWA	15 mg/m^3	Total dust
Styrene-Butadiene polymer (9003-55-8)	OSHA	TWA	5 mg/m^3	Respirable fraction
Styrene-Butadiene polymer (9003-55-8)	Alberta	TWA	10 mg/m^3	Total particulate
Styrene-Butadiene polymer (9003-55-8)	Alberta	TWA	3 mg/m^3	Respirable particulate
Styrene-Butadiene polymer (9003-55-8)	Ontario	TWAEV	10 mg/m^3	Inhalable
Styrene-Butadiene polymer (9003-55-8)	Ontario	TWAEV	3 mg/m^3	Respirable

ACGIH: Related to Particulates (insoluble or poorly soluble) not otherwise specified (PNOS)
OSHA: Related to Particulates not otherwise regulated
Alberta: Related to Particulates not otherwise regulated
Ontario: Related to Particulates (insoluble or poorly soluble) Not Otherwise Classified (PNOC)

ACGIH, OSHA, NIOSH, EPA, Alberta and Ontario exposure limit lists have been checked for major components listed with CAS registry numbers. Other exposure limits may apply, check with proper authorities.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance:	Solid, white beads or pellets
Odor:	Slight odor
pH:	No data available.
Boiling Point:	No data available.
Melting Point:	105 - 135°C (221 - 275°F)
Specific Gravity:	1.04 g/cc, 104 kg/m
Vapor Pressure:	Not applicable.
Vapor Density @ 0°C (Air = 1)	Not applicable.
Softening Point	79 - 127°C (174 - 261°F)

Water Solubility:	Insoluble.
Flammability Classification:	Not considered flammable according to OSHA.

10. STABILITY AND REACTIVITY

Chemical Stability:
This product is stable under normal use conditions for shock, vibration, pressure, and ambient temperature.

Instability:
Decomposition temperature: 300°C (572°F)

Conditions To Avoid:
Avoid processing material over 300°C (572°F).

Incompatibility: Not resistant to oxidizing agents, dissolves in organic solvents.

Hazardous Decomposition Products:
Material does not decompose at ambient temperatures. Hazardous decomposition products that may be generated are carbon monoxide, carbon dioxide, styrene and butadiene.

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

Corrosivity:
Not corrosive to the common metals.

11. TOXICOLOGICAL INFORMATION

Primary Route(s) of Exposure: Eye and skin contact.

Acute Toxicity – General Material Information:
Material is considered essentially inert and non-toxic. Exposure to high levels of dusts may be irritating to the eyes. Skin/eye contact with molten or heated material may cause burns. Vapors/heated fumes may be irritating to the respiratory system.

Acute Toxicity – LD_{50}/LC_{50}:
No LD_{50}/LC_{50}'s are available for this product's components.

Chronic Toxicity – General Material Information: No additional information is available.

Chronic Toxicity – Carcinogenic Effects:
ACGIH, EPA, IARC, OSHA, and NTP carcinogen lists have been checked for selected similar materials or those components with CAS registry numbers.
Styrene-Butadiene polymer (9003-55-8):
IARC: Supplement 7, 1987; Monograph 19, 1979 (Group 3 (not classifiable))

12. ECOLOGICAL INFORMATION

Ecotoxicity:
The information below is based on knowledge of this product's components and the ecotoxicity of similar products. Sewer/waterway obstruction: If aquatic animals ingest pellets, digestive tract obstruction may occur. This product is not expected to be toxic, but small particles may cause adverse physical effects in aquatic and terrestrial organisms.

Environmental Fate/Mobility:
The material sinks in water. Pellets are persistent in aquatic and terrestrial systems. Product should be recovered from water and land following spills. This product has not been found to migrate through soils.

Persistence and Degradability:
Pellets are persistent in aquatic and terrestrial systems. Do not allow product to enter sewer or waterways. Not expected to biodegrade.

Bioaccumulation/Accumulation:
Pellets may accumulate in the digestive systems of birds and aquatic life, causing injury and possible death due to starvation.

13. DISPOSAL CONSIDERATIONS

General Product Information:
This product, if discarded, is not expected to be hazardous waste according to US regulations or Canadian regulations. Check Local, State, Federal and Provincial Environmental Regulations prior to disposal.

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.

The recommended disposal methods for polymers in order of preference are: 1) clean and reuse if possible; 2) contact resin broker; 3) contact plastic recycler; 4) incinerate with waste heat recovery and/or 5) landfill. Reuse, recycling, storing, transportation and disposal must be in accordance with applicable federal, state/provincial and local regulations. DO NOT ATTEMPT TO DISPOSE OF BY UNCONTROLLED IGNITION.

Waste generator is advised to carefully consider hazardous properties and control measures needed for other materials that may be found in the waste.

See Section 7: Handling and Storage and Section 8: Exposure Controls/Personal Protection for additional information that may be applicable for safe handling and the protection of employees.

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Component Waste Numbers:
No EPA Waste Numbers are applicable for this product's components.

14. TRANSPORT INFORMATION

This material is not regulated as a hazardous material for transportation.

15. REGULATORY INFORMATION

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

International Regulations:
The monomer is listed by EINECS for styrene-butadiene polymer.

Component Analysis – International Inventory Status:

Component	CAS #	US – TSCA	CANADA – DSL	EU – EINECS
Styrene-Butadiene polymer	9003-55-8	Yes	Yes	Exempt

USA Federal and State Regulations:
Ongoing occupational hygiene, medical surveillance programs, or site emission or spill reporting may be required by Federal or State Regulations. Check for applicable regulations.

USA OSHA Hazard Communication Class:
This product is not considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

USA Right-To-Know – Federal:
None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) or CERCLA (40 CFR 302.4).

USA Right-To-Know – State:
None of this product's components are listed on the state lists from New Jersey or Pennsylvania.

State Regulations:
Contains ethylbenzene (<100 ppm), a chemical known to the State of California, under Proposition 65, to cause cancer. Under Proposition 65, a warning must be given unless it can be determined that exposure to a listed chemical does not pose a significant risk. This warning is hereby given such that anyone exposed to the impact polystyrene grade listed is aware of the presence of ethylbenzene. Determination of the necessity for a warning under Proposition 65 should be determined in each case and compared against the No Significant Risk Level (NSRL) published by California's Office of Environmental Health Hazard Assessment (OEHHA) on their website at:
http://www.oehha.ca.gov/prop65/law/Ethylbenz032808.html

We have no information to suggest that exposure to the levels of ethylbenzene found in the listed impact polystyrene poses any significant risk to the end-user or consumer.

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Canadian Regulations – Federal and Provincial:
Canadian Environmental Protection Act (CEPA): The components of this product are on the Domestic Substances List (DSL), or are exempt, and are acceptable for use under the provisions of CEPA.

WHMIS Ingredient Disclosure List (IDL):
No components are listed in the WHMIS Ingredient Disclosure List (IDL).

WHMIS Classification:
Workplace Hazardous Materials Information Systems (WHMIS): this product has been classified in accordance with Canadian Controlled Product Regulations (CPR) hazard criteria and this Safety Data Sheet contains complete CPR-required information. Not controlled under WHMIS (Canada).

Provincial Regulations:
Ongoing occupational hygiene, medical surveillance programs, or site emission or spill reporting may be required by Federal or Provincial regulations. Check for applicable regulations.

16. OTHER INFORMATION

Label Information:
PRECAUTIONS: Product is a clear to white, inert, solid bead or pellet with slight odor. This product is not considered flammable according to OSHA, but will burn on prolonged exposure to flame or high temperature. Slipping hazard.

Reason For Revisions:
1.0 – Initial document creation.
2.0 – Re-branding.

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.