SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : Marktec UP(Unsaturated Polyester) Chips

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified use : Surface Material Manufacture

1.3. Details of the supplier of the safety data sheet

Marktec, Inc.
1311 Needham Drive
Dalton, GA 30720
Website: www.marktecusa.com
Tel: 706-529-4818

1.4. Emergency telephone number

Emergency number : 706-529-4818
(Product/Safety)

SECTION 2: Hazards identification

Classification: Not Applicable

Risk phrases: Not Applicable

Safety phrases: Not Applicable

This product is not considered hazardous. The hazards if any are associated with its processing. Polymer dust may represent a fire hazard at sufficient concentrations in presence of ignition sources.

SECTION 3: Composition/information on ingredients

3.1. Composition

Name	Product identifier	%
Styrene(component)	(CAS No)100-42-5	50-64
Aluminum Hydroxide(component)	(CAS No)21645-51-2	32-39
Additive(component)	-	≤ 2.5
Hazardous Ingredient	-	None

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Inhalation is unlikely a route of exposure at ambient temperature.

In case of inhalation of dust or vapor from processing: Allow breathing of fresh air. Allow the victim to rest. Consult a physician if breathing is difficult or if symptoms persist.

First-aid measures after skin contact

: Unlikely a route of exposure as supplied. In case of generation of dust or vapor from processing: Wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Unlikely a route of exposure as supplied. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : Unlikely a route of exposure as supplied. Rinse mouth. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed No additional information available

SECTION 5: Firefighting measures

5.1. Burning behaviour

Flammable class : Not determined

Flash point : Not applicable**.** Product burns in fire.

Heat deflection : 130°C (Test ASTM648 B)

5.2. Special hazards arising from the substance or mixture

Fire hazard : The product is not flammable but burns.

Explosion hazard : Avoid generation of dust; fine dust dispersed in air in sufficient concentration, and in the presence of an ignition source is a potential dust explosion hazards.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling objects. Exercise caution when fighting any chemical fire.

Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : In case of generation of dust from processing: Spills of this product as dust, present a serious slipping hazard.

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.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Use appropriate PERSONAL PROTECTIVE EQUIPMENT and recover undamaged and minimally contaminated material for reuse and reclamation.

Emergency procedures : In case of generation of dust from processing: Ventilate area.

6.2. Environmental precautions

Contain according to the local, state, National regulation.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : In case of generation of dust or vapor from processing: Review HANDLING Section before proceeding with clean up. Use appropriate tools to put spilled solids in a convenient waste disposal container. Review FIRE FIGHTING MEASURES and HANDLING Sections before proceeding with clean up.

Avoid contact with skin and eyes. Avoid breathing dust and vapors. On land, sweep or shovel into suitable containers. Minimize generation of dust. Avoid raising airborne dust. Avoid dispersal of dust in the air (i.e.. cleaning dust surfaces with compressed air). Non-sparking tools should be used.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : In case of generation of dust from processing: This product presents a serious slipping hazard.

Precautions for safe handling : Processing/ Machining: Avoid breathing dust. Avoid breathing fumes generated during heating. Temperatures reached while thermoforming could be high enough to release some methyl methacrylate. Machining operations during fabrication, such as sawing, sanding or routing, create friction and may result in temperatures high enough to release small amounts of methyl methacrylate at the cutting tool surface. Ensure good ventilation of the work station. Wear personal protective equipment. Avoid raising airborne dust. Avoid contact with skin and eyes. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build statics electricity charges when subjected to the friction of transfer and mixture operations. Provide adequate precautions, such as electrical grounding and bonding or inert atmospheres.

Hygiene measures : In case of generation of dust from processing: Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : No specific storage is required. Store in well-ventilated area. Avoid high temperature. Do not over-stock.

Incompatible materials : No additional information available.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Styrene (100-42-5)		
ACGIH	ACGIH TLV (TWA) (ppm)	10 ppm 8 hours
ACGIH	ACGIH TLV (STEL) (ppm)	20 ppm 15 minutes
OSHA	OSHA PEL Z2 (TWA) (ppm)	100 ppm 8 hours
OSHA	OSHA PEL Z2 (CEIL) (ppm)	200 ppm
OSHA	OSHA PEL Z2 (AMP) (ppm)	600 ppm 5 minutes
NIOSH	NIOSH REL (TWA) (ppm)	50 ppm 10 hours
NIOSH	NIOSH REL (TWA) (mg/m³)	215 mg/m³ 10 hours
NIOSH	NIOSH REL (STEL) (ppm)	100 ppm 15 minutes
NIOSH	NIOSH REL (STEL) (mg/m³)	425 mg/m³ 15 minutes

Aluminum hydroxide (21645-51-2)		
OSHA	OSHA PEL (TWA) (mg/m³) Aluminum	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
ACGIH	ACGIH TWA (mg/m³) Aluminum	1 mg/m³ (respirable fraction)

8.2. Exposure controls

Appropriate engineering controls : No special engineering control is required for product as supplied.

Use adequate ventilation to keep employee exposures to airborne concentrations below recommended limits for dust or vapors from operations such as machining, cutting, routing, sanding, etc. In addition, provide for appropriate exhaust ventilation and dust collection at machinery.

In case of generation of dust or vapor from processing: It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust dusts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area. Use only appropriately classifies electrical equipment and powered industrial trucks.

Personal protective equipment : In case of generation of dust or vapor from processing:

Safety glasses. Gloves. Protective clothing. Respiratory protection.

Skin and body protection : Wear leather or cotton gloves when handling. Safety shoes are also recommended. Hearing protection may also be required during machining operations, depending on noise (decibel) levels.

Eye protection : Wear safety glasses during operations such as sawing, sanding, drilling, or routing. Also, machining operations could require safety goggles and face-shield to protect against flying debris/particles.

Respiratory protection	: In case of insufficient or inadequate ventilation during machining operations or if airborne particulate concentrations or vapors are expected to exceed permissible exposure limits, use a NIOSH approved air-purifying respirator. Respirators should be selected based on the form and concentration of the air contaminant and in accordance with OSHA Respiratory Protection Standard(s).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Small Particle Chips
Color	: Varies
Odor	: None / Odorless
Odor threshold	: Not applicable
pH	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Not applicable
Relative vapor density at 20 °C	: No data available
Relative density	: 1.4 – 1.7 (Water=1)
Solubility	: Not soluble in water
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable at normal temperatures and storage conditions.

10.3. Possibility of hazardous reactions

Polymerization will not occur in solid state.

10.4. Conditions to avoid

Extremely high temperatures.

10.5. Incompatible materials

None reasonably foreseeable, non-corrosive.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1	**Acute toxicity**	: Not classified
11.2	**Inhalation**	: Low acute toxicity. Dusts and vapors or fumes evolved during thermal processing may cause irritation to the respiratory system.
11.3	**Skin irritation**	: No evidence of irritant effect from normal handling and use.
11.4	**Eye irritation**	: Dust may have irritant effect on eyes. Permanent damage is unlikely.
11.5	**Ingestion**	: Data not available.

Marktec Unsaturated Polyester Chip is a non-toxic polymer. Proper use of these chips has not been associated with a special hazard or any detrimental effects on health. Polymer dust may represent a fire hazard at sufficient concentrations in presence of ignition sources.

SECTION 12: Ecological information

12.1	**Eco-toxicity**	: Low toxic to aquatic organisms.
12.2	**Mobility**	: The product is insoluble in water. Due to their negligible solubility in water and high molecular weight, they are expected to have a low BOD and will not cause oxygen depletion in aquatic systems.
12.3	**Persistence and degradability**	: The product is non-biodegradable.
12.4	**Bio accumulative potential**	: They are expected to be non-biodegradable and unlikely to bio-concentrate.
12.5	**Other adverse effects:**	Unlikely to affect biological treatment processes.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Preferred waste disposal options include recycling, landfill, or incineration, when in compliance with applicable Federal, State/Provincial, and Local regulations.

SECTION 14: Transport information

: No supplementary information available.

In accordance with DOT

Not regulated for transport

Additional information

Other information

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1 International regulations lists

United States inventory (TSCA 8b)	All components are active or exempted.
Australia (AICS)	All components are listed or exempted.
Canada (DSL)	All components are listed or exempted.
China (IECSC)	All components are listed or exempted.
Europe (EINECS)	**Not determined.**
New Zealand (NZIoC)	All components are listed or exempted.
Philippines (PICCS)	All components are listed or exempted.
Japan (ENCS)	All components are listed or exempted.
Republic of Korea (KECI)	All components are listed or exempted.
Taiwan (CSNN)	All components are listed or exempted.

15.2 U.S. Federal regulations

SARA 311/312

Per the June 13, 2016 Federal Register notice, EPA harmonized the EPCRA 311/312 hazard categories with the 2012 OSHA hazard communication standard for classifying and labeling of chemicals (i.e. GHS). Please refer to Section 2 of the SDS to identify the appropriate hazard categories for reporting purposes.

SARA 313

	Ingredient name	CAS number
Form R - Reporting requirements	styrene	100-42-5

CERCLA RQ - styrene - 1000 lbs. (453.6 kg)

15.3 US State regulations

California Prop. 65

⚠ **WARNING**: This product can expose you to Styrene, which is known to the State of California to cause cancer. For more information go to www. P65Warnings.ca.gov.

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SECTION 16: Other information

Abbreviations and acronyms : ACGIH (American Conference of Government Industrial Hygienists). ATE - acute toxicity estimate. CAS (Chemical Abstracts Service) number. CLP - Classification, Labelling and Packaging. HCS - Hazard Communication Standard. IARC (International Agency for Research on Cancer). OSHA - Occupational Safety and Health Administration. Overland transport (ADR). STEL- Short-Term Exposure Limit. TLV- Threshold Limit Value. TWA- Time Weighted Average. TSCA - Toxic Substance Control. European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. European Agreement concerning the International Carriage of Dangerous Goods by Road. Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008. International Agency for Research on Cancer. Median effective concentration. International Air Transport Association. Median lethal concentration. Median lethal dose.

Other information : Refer to NFPA 654, *Standard for the Prevention of Fire and Dust explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids,* for safe handling.

Full text of H-statements:

Comb. Dust	Combustible dust
Skin Sens. 1	Sensitization — Skin, category 1
H232	May form combustible dust concentrations in air
H317	May cause an allergic skin reaction

The information on this sheet is not a specification and does not guarantee specific properties. The information is intended to provide general knowledge as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instruction or recommendations are not followed.