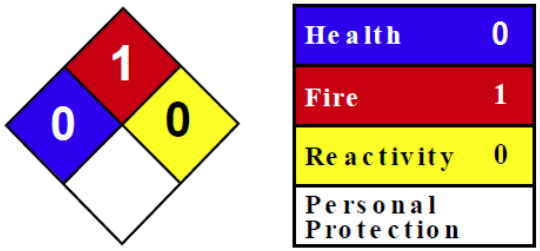
Material Safety Data Sheet
High Impact Polystyrene (HIPS)

Section 1 - Company Identification	
Trade Name	E.Styrenics
Supplier	Egyptian Styrene & Polystyrene Production Co, Egypt
Manufacturer	Egypt, Alexandria, El Dekhela Sea Port
Telephone	+2 03 4460 265
Fax	+2 03 4460 269
Head Office Address	Egypt, Cairo, Nasr City, East Gas Building, El Sefarat District, El Nabawy El Mohandis St.
P.O. Box	9550
Telephone	+2 02 26717198/9
Fax	+2 02 22739023

MSDS Name	Polystyrene
Threshold Exposure Limit (TLV)	Not Available
This MSDS covers all prime grades of High Impact Polystyrene	
Section 2 - Composition/ Information on Ingredients	
Chemical Name	Polystyrene
Chemical Family	Polymer
Chemical Formula	(C8H8)X (C4H6)y
Synonym	High Impact Polystyrene, HIPS
CAS Registry Number	9003-55-8
Threshold Exposure Limit (TLV)	Not Available
Section 3 - Hazard Identification	
Physical State and Appearance	Solid, White Pellets
Emergency Overview	Irritating vapors to respiratory system and eyes may form when polymer is processed at high temperature. Molten or Heated material in skin contact can cause severe burns.
Routes of Entry	**For Hot Material:** Skin contact, Eye Contact, Inhalation

Potential Acute Health Effects	
Eye	This Product is not known to cause eye irritation. However, as with any chemical, Some sensitive individual may experience eye irritation upon contact. Heated Polymer: Eye Contact can cause serious thermal burns. Vapors formed when polymer is heated may be irritating to the eye
Skin	No Know acute effects of this product resulting from skin contact. However, in light of good industrial hygiene e, expose to any chemical should be kept to minimum. Heated Polymer: Eye contact can cause serious thermal burns
Inhalation	Negligible hazard at room temperature. Nuisance dusts can be irritation to the upper respiratory tract. Irritation vapors may form when polymer is processed at high temperature
Ingestion	No Effects are expected for ingestion of small amounts
Potential Chronic Health Effects	**Carcinogenic Effects** Classified NONE by NTP, NONE by OSHA, Not Classified for human by IARC **Mutagenic Effects:** Not Available **TERATOGENIC EFFECTS:** Not Available
Medical Conditions	There is no known effect from chronic exposure to this product. Repeated or prolonged

Aggravated by Overexposure	exposure is not known to aggravated medical condition.
Overexposure/ Signs/ Symptoms	No adverse health effects anticipated from the solid pellet.
Refer to Toxicological information (Section 11)	
Section 4 - First Aid Measures	
Inhalation	Allow the victim to rest in a well ventilated area Polymer: No Known Effect on skin contact, rinse with water for a few minutes.
Skin Contact	Heated Polymer: For serious burns from heated polymer, get medical attention
Eye Contact	Rinse with water for a few minutes. Seek medical attention if necessary
Ingestion	No First aid procedures are needed.

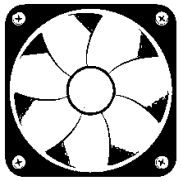
Section 5 - Fire and Explosive Data	
NFPA Rating	
Flammability of the Product	May be combustible at high temperature
Auto-Ignition Temperature	440°C (824 °F)
Flash Point	>200 °C (>392 °F)
Decomposition Temperature	> 250 °C (482 °F)
Flammable Limits	Not Available
Products of Combustion	Carbon Oxides (CO, CO_2) and soot.

Fire Hazards in Presence of Various Substances	Risks of Explosions of the product in presence of mechanical impact: Not Expected. Risks of explosion of the product in presence of static discharge: Possible No Specific information is available regarding the product's risk of explosion in presence of various materials.
Fire Fighting Media and Instructions	**Small Fire:** Use Dry Chemicals, CO_2, Water Spray, Halon or foam. **Large Fire:** Use water Spray, for or foam. DO NOT use water jet May re-ignite itself after fire is extinguished
Protective Clothing (Fire)	Wear MSHA/NIOSH approved Self-contained breathing apparatus or equivalent and full protective gear
Special Remarks on Fire Hazards	Fire may produce irritating gases and dense smoke. Flowing material may produce static discharge, ignition dust accumulations
Special Remarks on Explosion hazards	Processing or material handling equipment may generate dust of sufficiently small size, that when suspended in air may be explosive.

Section 6 – Accidental Release Measures	
Small Spill and Leak	Pellets on the floor could present a serious slipping problem. Good Housekeeping must be maintained at all times to avoid the hazards. Sweep. Shovel or vacuum material into clean containers.
Large Spill and Leak	Use a shovel to put the material into a convenient waste disposal container. Do not allow any potentially contaminated water with pellets to enter any waterway. Sewer or drain.
Section 7 – Handling and Storage	
READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. REFER TO PRODUCT LABEL OR MANUFACTURERS TECHNICAL BULLETINS FOR THE PROPER USE AND HANDLING OF THIS MATERIAL	
Handling	Avoid Temperatures of 600oF (316oC) or above. Handling of plastic may form nuisance dust. Protect personnel. Pneumatic transport of material may produce dust. Use Filters in pneumatic transport lines to reduce dust. If dusting is a problem, care should be taken to dissipate potential static electricity building-up. Normal precautions for finely

	divided powders should be made. **Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations, which have the potential of generating an accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids, National Fire Protection Association (NFPA 77), Recommended Practice on Static Electricity' (liquids, powders and dusts), and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents' (liquids).
Storage	Keep container dry. Keep in Cool Place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from heat and away from strong oxidizing agents.

Section 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. If users operations generate dust fume or mist, use ventilation to keep exposure to airborne contaminants below exposure limit.	
Personal Protection		
Eyes	Safety Glasses	
Body	Coveralls	

Respiratory	Ventilation is normally required when handling this product at high temperatures. Wear appropriate respirator when ventilation is inadequate.	
Hands	Thermal insulated gloves required when handling hot material.	
Feet	Safety slip proof shoes in areas where spills or leaks can occur.	
Personal Protection in Case of a Large Spill	Safety glasses. Gloves. Coveralls	
Section 8 - Physical and Chemical		
Physical State and Appearance	Solid. Transparent Pellets.	
Molecular Weight	Not Available	

Molecular Formula	$(\text{-CH } (C_6H_5)\text{-CH-})_X - (CH_2\text{-CH=CH-}CH_2)_Y$
pH (1% Soln/Water)	Not Applicable
Boiling/ Condensation Point	Not Applicable
Melting/ Freezing Point	>132.22 ^{o}C (270 ^{o}F)
Critical Temperature	Not Available
Specific Gravity	1.04 (Water = 1)
Vapor Pressure	Not Available
Vapor Density	Not Available
Volatility	Negligible
Odor Threshold	Not Available
Evaporation Rate	Not Available
VOC	0%
Viscosity	Not Available
LogKow	Not Available
Lonicity (In Water)	Not Available
Dispersion Properties	Not Available

Solubility in Water	Insoluble in Water
Physical Chemical Comments	No Additional Remark
Exclusivity Limit	Not Available
Odor	Odorless
Taste	Not Available
Color	Polystyrene is a colorless, transparent, glassy solid or a soft colorless form
Section 10 - Stability and Reactivity	
Stability and Reactivity	The product is stable. Avoid temperature of 600 deg F (316 ^{o}C) or above
Conditions of instability	No additional remark
Incompatibility with Various Substances	Reactive with strong oxidizing agents
Hazardous Decomposition Products	Hazardous decomposition products are carbon monoxide, carbon dioxide, dense smoke and hydrocarbons. Exposure of polystyrene to extremely high temperature (600 deg F or Higher) may cause partial decomposition. Chemicals that may release include styrene monomer, benzene and other hydrocarbons.
Hazardous Polymerization	No

Section 11 - Toxicological Information	
Toxicity Animals	LD50: Not Available LC50: Not Available
Chronic Effects on Humans	Carcinogenic Effects: Classified none by NTP, none by OSHA, (Not Classified for Human) by IARC.
Other Toxic Effects on Humans	Not Considered to be dangerous for humans according to our database
Special Remarks on Toxicity to Animals	No Additional Remark
Special Remarks on Chronic Effects on Humans	No Additional Remark
Special Remarks on other Toxic Effects on Humans	No Additional Remark
Section 12 - Ecological Information	
Ecotoxicity	Not Available
BOD5 and COD	Not Available
Biodegradable/ OECD	Not Available

Mobility	Not Available
Toxicity of the Products of Biodegradable	Not Available
Special Remarks on the Products of Biodegradation	Not Available
Section 13 - Considerations of Disposal and Treatment	
Waste Information	Transfer to an approved disposal area in accordance with federal, state and local regulations
Waste Stream	Not Available Consult your local or regional authorities
Section 14 - Transport Information	
DOT Classification or Bulk shipments (Non Bulk Shipment may differ)	Not a DOT controlled material
DOT Proper Shipping Name	Not Applicable
UN Number	Not Established
Packaging Group	Not Available
USCG Proper Shipping Name	Not Available

Marine Pollutant	Not Listed in Appendix B to 49CFR172.101
Hazardous Substances Reportable Quantity	Not Listed in Appendix A to 49CFR172.101
Special Provisions for Transport	No Additional Remark
TDG Classification	Not Controlled under TDG (Canada)
ADR/RID Classification	Not Controlled under ADR (EUROPE)
IMO/IMDG Classification	Not Controlled under IMDG
ICAO/IATA Classification	Not Controlled under IATA
Section 15 - Regulatory Information	
HCS Classification	This Product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication standard, 29 CFR 1910.1200. TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory. SARA 302/304/311/312 Extremely Hazardous Substances: No products were found.
U.S Federal Regulations	SARA 302/304 Emergency Planning and notification: No Products were found. SARA 302/304/311/312 Hazardous Chemicals: No Products were found SARA 311/312 MSDS distribution- Chemical inventory- hazard identification: No Products were found.

	Clean Water act (CWA) 307: No products were found Clean water act (CWA) 311: No products were found Clean air act (CAA) 112 Accidental release prevention: No products were found Clean air act (CAA) 112 regulated flammable substances: No Products were found Clean air act (CAA) 112 regulated toxic substances: No products were found
International Regulations	
WHMIS (Canada)	Not Controlled under WHMIS (Canada) CEPA Toxic Substances: This material is not listed. Canadian ARET: This material is not listed. Alberta Designed Substances: This material is not listed Ontario Designated Substances: This material is not listed Quebec Designated Substances: This material is not listed
EINECS	Not available
DSCL (EEC)	Not controlled under DSCL (Europe)

International Lists	Australia Inventory (AICS): This material is listed or exempted China Inventory (IECSC): This material is listed or exempted Japan Inventory (ENCS): This material is listed or exempted Japan Inventory (ISHL): This material is listed or exempted Korea Inventory (KECI): This material is listed or exempted New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted Philippines Inventory (PICCS): This material is listed or exempted
Section 16 - Other Information	
Label Requirements	Irritating vapors to respiratory system and eyes may form when polymer is processed at high temperature. Molten or heated material in skin contact can cause severe burns
NFPA RATINGS	Health: 1 Flammability: 1 Reactivity: 0 Special: NA (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE: Personal Protection Equipment Index recommendation, *-Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA).
ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT	TLV - Threshold Limit Value STEL - Short-term Exposure Limit ACGIH - American Conference of Government Industrial Hygienists

	NIOSH - National Institute for Occupational Safety & Health WHMIS - Workplace Hazardous Materials Information System EINECS - European Inventory of existing TWA - Time Weighted Average PEL - Permissible Exposure Limit OSHA - Occupational Safety & Health Administration NFPA - National Fire Protection Agency IARC - Intl. Agency for Research on Cancer RCRA - Resource Conservation Recovery Act Commercial Chemical Substances SARA - Superfund Amendments and Reauthorization Act. EC50 - Effective Concentration LD50 - Lethal Dose NDA - No Data Available <= - Less Than or Equal To >= - Greater Than or Equal To CNS - Central Nervous System

	TSCA - Toxic Substance Control Act LC50 - Lethal Concentration CAS - Chemical Abstract Service NA - Not Applicable MAK - Germany Maximum Concentration Values
References	HSDB- Hazardous Substances Data Book RTECS- Registry of Toxic Effects of Chemicals Substances
The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.	