

Section 1. Chemical Product and Company Identification	
Product Name/ Trade Name	Crystal Polystyrene
CAS #	9003-53-6
DSL	On the DSL list.
Synonym	Polystyrene resin, Polystyrene homopolymer
Chemical Name	Polystyrene
Chemical Family	Polymer.
Chemical Formula	(C ₈ H ₈) _x
Manufacturer	Material Uses Thermoplastic resin.

In case of Emergency
Call Uline at 1-800-295-5510.
1-800-424-9300 (CHEMTREC-USA)
1-613-996-6666 (Canutec-Canada)(24 hours)

Section 2. Composition and Information on Ingredients				
			<i>Exposure Limits</i>	
Name	CAS #	% by Weight	TLV/PEL	LC ₅₀ /LD ₅₀
Polystyrene homopolymer:	9003-53-6	90-100	NONE	NONE

Section 3. Hazards Identification	
Emergency Overview	Clear to white, inert, solid pellet with slight odour. These do not meet the definitions for combustible solids but will burn if exposed to flame. Slipping hazard.
Potential Acute Health Effects	Slightly hazardous in case of skin contact (irritant), of eye contact (irritant). When heated, molten material may cause burns to unprotected skin.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Classified None known [Crystal Polystyrene]. MUTAGENIC EFFECTS: None known. TERATOGENIC EFFECTS: None known. Toxicity of the product to the reproductive system: None known. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure is not known to aggravate any medical condition.

Section 4. First Aid Measures	
Eye Contact	Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.
Skin Contact	Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap.
Hazardous Skin Contact	Seek medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek medical attention if irritation persists.
Hazardous Inhalation	Seek medical attention.
Ingestion	Seek medical attention.
Hazardous Ingestion	Seek medical attention.
	1-800-561-6682 (24 hours)

Continued on Next Page

Notes to Physician	Smoke and hazardous decomposition products produced in fires involving plastic resins can be irritating and may cause pulmonary edema in severely exposed individuals. As this effect may be delayed in onset, a 72-hour post-exposure observation is recommended. Carboxyhemoglobin levels should also be monitored to assess the degree of carbon monoxide absorption in these individuals.
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Section 5. Fire Fighting Measures

The product is:	Nonflammable, but will burn on prolonged exposure to flame or high temperature.
Auto-Ignition Temperature	427°C (800°F)
Flash Points	345° to 360°C (653° to 680°F) (Combustible Flash Ignition Temperature).
Flammable Limits	Not available.
Products of Combustion	Styrene, carbon oxides (CO, CO ₂) water
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet. Full-face, NIOSH-approved self-contained breathing apparatus and appropriate protective clothing must be worn by all individuals required to enter the hazard area.
Special Remarks on Fire Hazards	May support combustion but does not meet combustible definition. When heated to decomposition it emits acrid smoke and irritating fumes.
Special Remarks on Explosion Hazards	Powdered material may form explosive dust-air mixtures, ground equipment. Static charges can accumulate during shipping, unloading, pouring, or conveying. Dissipate static electricity during transfer by grounding and bonding containers and equipment.
Fire Hazards in Presence of Various Substances	Static control is required during transfer of product.
Explosion Hazards in Presence of Various Substances	Risk of dust-air explosion is enhanced if flammable vapours are also present.

Section 6. Accidental Release Measures

Small Spill	Spilled product may create a dangerous slipping hazard. Sweep up and place in suitable clean, dry containers for reclamation or later disposal.
Large Spill	Sweep up and place in suitable clean, dry containers for reclamation or later disposal.
Personal Protection in Case of a Large Spill	Gloves. Safety glasses.
Transportation Spill	Contact local police and appropriate emergency telephone numbers provided in Section 1. Ensure statutory and regulatory reporting requirements in the applicable jurisdiction are met.

Section 7. Handling and Storage

Precautions	Good general ventilation should be sufficient to control airborne levels. Ground all equipment containing material. Store and use away from heat, sparks, open flame, or any other ignition source. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Incompatibility	Slightly reactive to reactive with oxidizing agents, dissolves organic materials.
Storage	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. Small amounts of fines or dust contained in granular resins, or may erode from pelleted resins may accumulate in material handling systems. If permitted to accumulate, these fines or dust can, under certain conditions, pose an explosion hazard. Every effort should be made to prevent the suspension, concentration or accumulation of fines or dusts in, or around, material handling systems. Further information can be obtained from NFPA-654. "Standard for the Prevention of Fire and Dust Explosions in Chemical, Dye, Pharmaceutical and Plastics Industries."

Section 8. Exposure Controls/Personal Protection

Engineering Controls Ventilation systems must be designed in accordance with approved engineering standards. Provide efficient ventilation during processing to remove heat and any volatiles released. Maintain airborne concentrations below occupational exposure limits and 10% of the LEL. Exhaust directly to the outside. Supply sufficient replacement air to make-up for air removed by exhaust systems. Use non-sparking, grounded ventilation systems separate from other exhaust systems.

Personal Protection

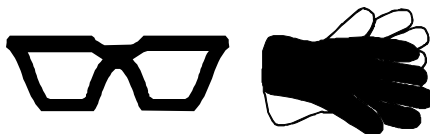
Eyes Safety glasses.

Body Wear heat protective clothing if there is a potential for contact with heated material.

Respiratory Wear appropriate respirator when ventilation is inadequate.

Hands Wear heat protective gloves if there is a potential for contact with heated material.

Feet Safety footwear with good traction to prevent slipping.

Protective Clothing (Pictograms)**Remarks on Personal Protection**

Personal protective equipment (PPE) must not be considered a long term solution to exposure control. PPE must be accompanied by employer programs to properly select, maintain, clean, fit and use equipment. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers and applicable regulations to ensure adequate protection.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. Beads or pellets.	Odor	Slight odour.
pH (1% soln/water)	Not applicable.	Taste	NONE
Boiling Point	Not applicable.	Color	Clear to white.
Melting Point	105°C to 135°C (221°F to 275°F)		
Softening Point	85°C to 127°C (185°F to 261°F)		
Specific Gravity	1.04 g/cc, 104 kg/m ³		
Evaporation Rate	Not applicable.		
Vapor Pressure	Not applicable.		
Vapor Density	Not applicable.		
Volatility	Not applicable.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not applicable.		
Ionicity (in Water)	Not available.		
Dispersion Properties	Not available.		
Solubility	insoluble in water.		

Section 10. Stability and Reactivity

Stability	The product is stable.
Conditions of Instability	Decomposition temperature: 300°C (572°F)
Incompatibility with various substances	Slightly reactive to reactive with oxidizing agents, dissolves organic materials.
Hazardous Polymerization	Will not occur.
Corrosivity	Not considered to be corrosive.
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide, styrene and other toxic gases at elevated temperatures. Avoid processing at >300°C (572°F)
Special Remarks on Reactivity	Inert material. Decomposes. 300°C (572°F)
Special Remarks on Corrosivity	No additional remark.

Section 11. Toxicological Information

Routes of Entry	Ingestion.
Toxicity to Animals	LD50: NONE LC50: NONE
Acute Effects on Humans	<p>Eyes Very slightly to slightly hazardous in case of eye contact (irritant).</p> <p>Skin Sensitization of the product: Not available. Very slightly to slightly hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Contact with molten resin will burn unprotected skin. Solid does not appear to affect the skin.</p> <p>Inhalation Non-hazardous in case of inhalation. Negligible hazard at ambient temperatures. Inhalation of vapours released at high extrusion and molding temperatures and fine dust particles may cause mild respiratory tract irritation but is not known to cause any significant health effects.</p> <p>Ingestion Non-hazardous in case of ingestion.</p>
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified None known [Crystal Polystyrene]. MUTAGENIC EFFECTS: None known. TERATOGENIC EFFECTS: None known. Toxicity of the product to the reproductive system: None known. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure is not known to aggravate any medical condition.
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.
Products of Biodegradation	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks on the Products of Biodegradation	Pellets may accumulate in the digestive systems of sea birds, and other marine life. Pellet handling should be controlled to avoid entry into water ways.
Environmental Fate	This product sinks in water. Stable. Polymer.

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Section 13. Disposal Considerations

Waste Disposal	Preferred disposal methods 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.
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Section 14. Transport Information

TDG Classification	Not controlled under TDG (Canada).
PIN	Not applicable.
Special Provisions for Transport	Not applicable.
DOT (USA)	Not a DOT controlled material (United States).

Section 15. Other Regulatory Information and Pictograms


WHMIS (Classification)	Workplace Hazardous Materials Information System (WHMIS): This product has been classified with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR. Not a WHMIS controlled material.
CEPA	Canadian Environmental Protection Act (CEPA): NOVA Crystal Polystyrene polymers are listed on the Domestic Substances List (DSL), and is acceptable for use under the provisions of CEPA.
USA - OSHA	Not controlled under the HCS (United States).
USA - EPA	TSCA (Toxic Substance Control Act): The ingredients are listed on the TSCA Inventory.
SARA III	Superfund Amendments and Reauthorization Act (SARA) Section 311 and 312 applicable hazard categories are: NONE. This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: None.
State	Not applicable.
EINECS	EINECS: The monomers of this product are on the European Inventory of Existing Commercial Chemical Substances.
Food Contact Status	Refer to Product Data Sheet.
Other Regulations	No additional remark.

Other Classifications	HCS (U.S.A.)	Not controlled under the HCS (United States).
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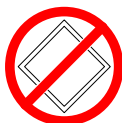
Hazardous Material Information System (U.S.A.)	Health Hazard	0
	Fire Hazard	1
	Reactivity	0
	Personal Protection	B

Health Hazard	0
Fire Hazard	1
Reactivity	0
Personal Protection	B

National Fire Protection Association (U.S.A.)

Health		Fire Hazard
		Reactivity
		Specific Hazard

DOT (U.S.A.) (Pictograms)



Section 16. Other Information

WHMIS (Pictograms)



PRECAUTIONS: Avoid contact with skin and eyes. After handling, always wash hands thoroughly with soap and water. Safety glasses.

FIRST AID:

SKIN: Wash contaminated skin with soap and water.

EYES: Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention.

INHALATION: Move exposed person to fresh air. If irritation persists, get medical attention.

INGESTION: Seek medical attention.

IN CASE OF A LARGE SPILL: Absorb with DRY earth, sand or other non-combustible material.

References Not available.

Other Special Considerations No additional remark.

Validated by Product Integrity Group on 4/14/2000.

Verified by Product Steward.

Printed 5/2/2000.

Information Contact NOVA Chemicals Ltd.
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Product Safety - 403-750-3623

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