

Section I. Chemical Product and Company Identification	
Product Name/ Trade Name	DYLITE® EXPANDABLE POLYSTYRENE - MODIFIED GRADE
Synonym	Foam Polystyrene ; 2288
Chemical Name	Expandable Polystyrene
Chemical Family	Plastic.
Chemical Formula	Mixture
Manufacturer	NOVA Chemicals Inc. 400 Frankfort Road Monaca, PA 15061-2298
Material Uses	Petrochemical industry; Plastics.
CAS#	Mixture 10/03
DSL	On the DSL list.
In case of Emergency 1-800-561-6682 (24 hours) 1-800-424-9300 (CHEMTREC-USA) 1-613-996-6666 (Canutec-Canada)(24 hours)	

Section II. Composition and Information on Ingredients				
Name	CAS #	% by Weight	TLV/PEL	LC ₅₀ /LD ₅₀
Polystyrene homopolymer	9003-53-6	90-95	Not available.	Not available.
n-Pentane	109-66-0	3-9	TWA: 600 STEL: 750 (ppm) from OSHA [1992]. INHALATION	VAPOR (LC50)ppm : Acute: 123389 (Rat) (4 hour(s)).
Cyclopentane	287-92-3	0-3	TWA: 600 STEL: 750 (ppm) from ACGIH [1996]. INHALATION	Not available.
Isopentane	78-78-4	0-3	TWA: 600 (ppm) from OSHA [1992]. INHALATION	Not available.
			TWA: 600 (ppm) from ACGIH [1992]. INHALATION	
			TWA: 600 STEL: 900 (ppm) from Canada [1992]. INHALATION	
			TWA: 600 STEL: 750 (ppm) from ACGIH	
			TWA: 600 STEL: 750 (ppm) from OSHA	

Section III. Hazards Identification	
Emergency Overview	Solid, white bead with slight hydrocarbon odour. Extremely flammable in presence of open flames, sparks or heat. Slight eye irritant, skin irritant and respiratory irritant due to presence of blowing agent. Highly reactive with oxidizing agents. When heated to decomposition, product emits acrid smoke and irritating fumes. Slipping hazard.
Potential Acute Health Effects	Slightly hazardous to hazardous in case of skin contact (irritant), of eye contact (irritant). Very slightly to slightly hazardous in case lung irritation. Non-corrosive for skin. Non-sensitizer for skin. Non-permeator by skin. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation. This product may irritate eyes and skin upon contact.

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Potential Chronic Health Effects	Slightly hazardous to hazardous in case of skin contact (irritant), of eye contact (irritant); Non-corrosive for skin. Non-sensitizer for skin. Non-permeator by skin. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation. CARCINOGENIC EFFECTS: Classified NONE [2288 DYLITE EPS MODIFIED] MUTAGENIC EFFECTS: Classified NONE by [2288 DYLITE EPS MODIFIED] TERATOGENIC EFFECTS: Classified NONE by [2288 DYLITE EPS MODIFIED]. The substance is not toxic to the reproductive system.
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Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.
Skin Contact	Not normally expected to present a skin hazard. May cause skin irritation in sensitive individuals. Remove contaminated clothing immediately. Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention.
Hazardous Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	Not normally expected to present an ingestion hazard. If ingestion occurs, maintain an open airway and seek medical attention. Watch for an obstruction in the victim's mouth. Remove if possible but do not force fingers or a hard object between the victim's teeth. Seek medical attention.
Hazardous Ingestion	Not normally expected to present an ingestion hazard. If ingestion occurs, maintain an open airway and seek medical attention. Watch for an obstruction in the victim's mouth. Remove if possible, but do not force fingers or a hard object between the victim's teeth. Seek medical attention.
Notes to Physician	1-800-561-6682 (24 hours) Treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. After adequate first aid, no further treatment is required unless symptoms reappear. There is no specific antidote.

Section V. Fire and Explosion Data

Flammability of the Product	May support combustion but does not meet combustible definition.
Auto-Ignition Temperature	427°C (800.6°F)
Flash Points	CLOSED CUP: -40°C (-40°F) (Tagliabue.) Blowing agent.
Flammable Limits	Not available.
Products of Combustion	carbon oxides (CO, CO2)
Fire Hazards in Presence of Various Substances	Extremely flammable in presence of open flames and sparks, of heat. Highly flammable in presence of oxidizing materials. Non-flammable in presence of shocks, of reducing materials, of combustible materials, of organic materials, of metals, of acids, of alkalis, of moisture.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.

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Special Remarks on Fire Hazards	Containers should be grounded. Dangerous fire and explosion risk. Vigorously supports combustion. When heated to decomposition it emits acrid smoke and irritating fumes. Vapor may travel considerable distance to source of ignition and flash back. Material emits flammable gases.
Special Remarks on Explosion Hazards	Vapours may travel along ground and flashback along vapour trail.

Section VI. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Spilled product may create a dangerous slipping hazard.
Large Spill	Flammable vapours released from spill. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition.

Section VII. Handling and Storage

Precautions	<p>S2- Keep out of reach of children. S22- DO NOT breathe dust. S25- Avoid contact with eyes. S26- In case of contact with eyes, rinse immediately with plenty of water. Seek medical attention. S33- DO NOT use in presence of electrostatic discharges. S37- Wear suitable gloves. S40- To clean the floor and all objects contaminated by this material, use water. S43- In case of fire, refer to the appropriate section in the Material Safety Data Sheet for this product. S46- If swallowed, seek medical advice immediately and show the container or the label.</p>
Storage	Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

Section VIII. 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 user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Gloves (impervious). Wear appropriate respirator when ventilation is inadequate.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient. consult a specialist BEFORE handling this product.
Exposure Limits	<p>n-Pentane TWA: 600 STEL: 750 (ppm) from OSHA [1992] INHALATION TWA: 600 STEL: 750 (ppm) from ACGIH [1996] INHALATION Cyclopentane TWA: 600 (ppm) from OSHA [1992] INHALATION TWA: 600 (ppm) from ACGIH [1992] INHALATION TWA: 600 STEL: 900 (ppm) from Canada [1992] INHALATION Isopentane TWA: 600 STEL: 750 (ppm) from ACGIH TWA: 600 STEL: 750 (ppm) from OSHA</p> <p>Consult local authorities for acceptable exposure limits.</p>
Remarks on Personal Protection	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 to ensure adequate protection.

Section IX. Physical and Chemical Properties

Physical state and appearance	Solid. (Beads solid.)	Odor	Hydrocarbon (Slight.)
Molecular Weight	Not applicable.	Taste	Not available.
pH (1% soln/water)	Not available.	Color	White. (Light.)
Boiling Point	Not available.		
Melting Point	240°C (464°F) based on data for: Polystyrene homopolymer.		
Critical Temperature	Not available.		
Specific Gravity	1.05 (Water = 1)		
Vapor Pressure	400 mm of Hg (@ 20°C)		
Vapor Density	2.5 (Air = 1).		
Volatility	9 to 16% (v/v).		
Odor Threshold	Not available.		
Evaporation rate	Not available.		
Viscosity	Not available.		
Water/Oil Dist. Coeff.	The product is more soluble in oil.		
Ionicity (in Water)	Non-ionic.		
Dispersion Properties	Is not dispersed in cold water, hot water. See solubility in methanol, diethyl ether, n-octanol, acetone.		
Solubility	Soluble in methanol. Partially soluble in diethyl ether, n-octanol, acetone. Very slightly soluble in cold water, hot water.		

Section X. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	No additional remark.
Incompatibility with Various Substances	Highly reactive with oxidizing agents, organic materials. Non-reactive with reducing agents, combustible materials, metals, acids, alkalis, moisture.
Corrosivity	Not considered to be corrosive for metals and glass according to our database.
Special Remarks on Reactivity	Strong oxidizers can increase fire and explosion hazard. (Cyclopentane)
Special Remarks on Corrosivity	No additional remark.

Section XI. Toxicological Information

Routes of Entry	Eye contact. Ingestion.
Toxicity to Animals	WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute toxicity of the vapor (LC50): > 5000 ppm (Rat) (n-Pentane).
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified NONE [2288 DYLITE EPS MODIFIED]. MUTAGENIC EFFECTS: Classified NONE by [2288 DYLITE EPS MODIFIED]. TERATOGENIC EFFECTS: Classified NONE by [2288 DYLITE EPS MODIFIED]. The substance is not toxic to the reproductive system.

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Other Toxic Effects on Humans	Slightly hazardous to hazardous in case of skin contact (irritant), of eye contact (irritant). Non-corrosive for skin. Non-sensitizer for skin. Non-permeator by skin. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation.
Special Remarks on Toxicity to Animals	LD50-(Intravenous), Mouse - 446mg/kg (n-Pentane)
Special Remarks on Chronic Effects on Humans	Neurotoxic effects and dermatitis. (n-Pentane)
Special Remarks on Other Toxic Effects on Humans	Chemical damaging to lungs if aspirated. Exposure can cause nausea and headache. Narcotic in high concentrations. Causes dermatitis. (n-Pentane)

Section XII. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are as toxic as the original product.
Special Remarks on the Products of Biodegradation	No additional remark.

Section XIII. 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 regulation.
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Section XIV. Transport Information

ADR Classification	ADR CLASS 9
Special Provisions for Transport	Substances evolving flammable vapour.

Section XV. Other Regulatory Information and Pictograms

Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product is on the Domestic Substances List (DSL), and is acceptable for use under the provisions of CEPA.																	
Other Classifications	HCS (USA)	HCS CLASS: Irritating substance.																
	WHMIS (Canada)	Not controlled under WHMIS (Canada).																
Hazardous Material Information System (U.S.A.)	<table border="1"> <tr> <td>Flammable</td> <td>2</td> </tr> <tr> <td>Explosive</td> <td>3</td> </tr> <tr> <td>Reactivity</td> <td>0</td> </tr> <tr> <td>Personal Protection</td> <td>J</td> </tr> </table>	Flammable	2	Explosive	3	Reactivity	0	Personal Protection	J	<table border="1"> <tr> <td>National Fire Protection Association (U.S.A.)</td> <td>Health</td> <td>2</td> <td>Flammability</td> <td>3</td> <td>Reactivity</td> <td>0</td> <td>Specific hazard</td> </tr> </table>	National Fire Protection Association (U.S.A.)	Health	2	Flammability	3	Reactivity	0	Specific hazard
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Personal Protection	J																	
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WHMIS (Canada)
(Pictograms)



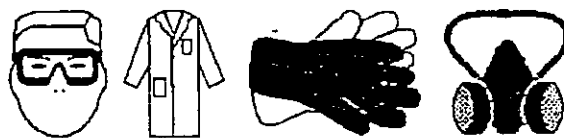
TDG (Canada)
(Pictograms)



DOT (U.S.A)
(Pictograms)



Protective Clothing
(Pictograms)



Section XVI. Other Information

References Not available.

Other Special Considerations CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986. This product is not known to the State of California to cause cancer. CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product is on the Domestic Substances List (DSL), and is acceptable for use under the provisions of CEPA. CERCLA/SUPERFUND, 40 CFR 117,302: This product contains no Reportable Quantity (RQ) Substances. CERCLA: SARA HAZARD CATEGORY: This product has been revised according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category(ies): TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory. (Polystyrene homopolymer)

Validated by Mike Phibbs on 10/17/97.

Verified by Shevta Bagade.

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