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DIAREX by GC

Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product name	DIAREX GPPS	**In Case of Emergency and Technical Information**	**Thailand:** +66(0)-3897-6682 +66(0)-3897-6683 +66(0)-3897-6684
Synonym	General Purpose Polystyrene, Vinylbenzene polymer, Styrene polymer	**Revision**	Feb 2024
		Product Grade	THF77, THH102, THH103
Chemical Family	Ethenylbenzene homopolymer		
CAS Registry Number	9003-53-6	**SDS No.**	PS0001 (EN)
Company Name / Manufacturer Address	PTT Global Chemical Public Company Limited 7, I-1 Road, Maptaput Industrial Estate, Map Ta Phut, Muang Rayong District, Rayong 21150, Thailand,		

Section 2. Hazards Identification

Emergency Overview

Irritating vapors to respiratory system and eyes may form when polymer is processed at high temperatures.

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

Eyes

Dust may cause mechanical irritation to eye.

Heated Polymer: Eye contact can cause serious thermal burns. Vapors formed when polymer is heated may be irritating to the eye.

Skin

No known acute effects of this product resulting from skin contact at room temperature.

Heated Polymer: skin contact can cause serious thermal burns.

Inhalation

Negligible at room temperature. Nuisance dusts can be irritating to the upper respiratory tract.Irritating vapors may form when the polymer is processed at high temperatures.

Ingestion

No effects are expected for ingestion of small amounts. May be a choking hazard.

Potential Chronic Health Effects

CARCINOGENIC EFFECTS: Polystyrene is not a known carcinogen.
Not listed as a carcinogen by OSHA, NTP or IARC.

Medical Conditions Aggravated by Overexposure

Pre-existing disorders involving any target organs mentioned in this SDS as being at risk may be aggravated by over-exposure to this product.

Overexposure/Signs/ Symptoms

No adverse health effects anticipated from the solid pellet.

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Section 3. Composition and Information on Ingredients

Substance Name	CAS No.	% by Weight
Polystyrene	9003-53-6	> 96.75
Additives	-	< 3.25

Section 4. First Aid Measures

Eye Contact
Rinse with water for a few minutes. Seek medical attention if necessary

Skin Contact
Polymer: NO known EFFECT on skin contact, rinse with water for few minutes.
Heated Polymer: For serious burns from heated polymer, get medical attention.
In case of skin contact, immediately immerse in or flush with clean, cold water.

Inhalation
Non-toxic material. Dusts in high concentrations may cause irritation to upper respiratory tract. Allow the victim to rest in a well-ventilated area.

Ingestion
Not expected that the ingestion of this material causes an effect on health. The toxicity of a single oral dose in considered. extremely low.

Section 5. Fire Fighting Measures

Flammability of the Product
May be combustible at high temperature.

Auto-ignition Temperature
488 – 496 ^{0} C.

Flash Points
>550 ^{0}C .
296 – 360^{0}C (under condition of decomposition excess heating decompose polystyrene and decomposed materials makes flash point lower.

Flammable Limits
Not available.

Products of Combustion
Can produce carbon monoxide (CO), carbon dioxides (CO2), styrene, aliphatic hydrocarbons and soot.

Fire Hazards in Presence of Various Substances
No specific information is available in our database regarding the flammability of this product in presence of various materials.

Fire Fighting Media and Instructions
SMALL FIRE: Dry chemical extinguisher (ABC or AB). Use water spray or fog.
LARGE FIRE: Use water spray or fog. 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, igniting dust accumulations.

Special Remarks on Explosion Hazards
Processing or material handling equipment may generate dust of sufficiently small particle size, that when suspended in air may be explosive.

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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 this hazard. 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

Handling

Avoid Temperatures of 600°F (316°C) or above.

Handling of plastic may form nuisance dust. Protect personnel.

Pneumatic material handling and processing equipment may generate dust of sufficiently small particle size that, when suspended in air, may be explosive. Dust accumulations should be controlled through a comprehensive dust control program that includes, but is not limited to, source capture, inspection and repair of leaking equipment, routine housekeeping and employee training in hazards. See NFPA 654.

Dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

When handled in bulk quantities, this product and its associated packaging may present a crushing hazard due to the large masses involved, possibly resulting in severe injury or death.

Storage

Keep container dry. Keep in a 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 extreme heat and away from strong oxidizing agents.

Section 8. Exposure Controls/Personal Protection

Control Parameter
Exposure limit value

Occupational Exposure limit (OEL)
GESTIS-International limit values for chemical agents

Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below established levels. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection

Eyes Safety glasses with side shields.

Body Coveralls.

Respiratory Ventilation is normally required when handling this product at high temperatures. Wear appropriate respirator when ventilation is inadequate.

Hands Thermally insulated gloves required when handling hot material.

Feet Shoes.

Protective Clothing (Pictograms)

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Personal Protection in Case of a Large Spill Safety glasses. Gloves. Coveralls

Product Name	Exposure Limits
Polystyrene (GPPS)	Not established.

Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

9.1. General Information (appearance, odor)

Physical State and Appearance	Solid. Pellets.
Color	Clear with Slightly Blue
Odor	Odorless.
Oder Threshold	Not available.

9.2. Important Health, Safety and Environmental Information

Flash Point	>550 ^{0}C .
	296 – 360^0 C (under condition of decomposition excess heating decompose polystyrene and decomposed materials makes flash point lower.
Flammability (solid,gas)	Not applicable.
Flammable Limited in Air	**Lower ;** Not applicable. **Upper ;** Not applicable
Auto ignition Temperature	488 – 496 ^{0} C.
Vapor Pressure	Not applicable.
Boiling Point (760 mmHg)	Not applicable.
VOC	0 (%)
Solubility	Insoluble in water . Soluble in esters, ketone, aromatic hydrocarbons.
Volatility	Negligible.
Decomposition Temperature	Equilibrium point between polymerization and de-polymerization is around 250 ^{0}C .

9.3. Other data

Molecular Weight	Not applicable.
Molecular Formula	(-CH(C6H5)-CH2-)x
Melting Point	> 132 °C
Specific Gravity	1.04 (Water = 1)
Freezing Point	Not applicable

Section 10. Stability and Reactivity

Reactivity	No information available.
Stability	This product is stable under normal conditions.
Hazardous Polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur
Conditions to Avoid	Keep away from heat , flames and sparks. Avoid Temperatures of 600°F (316°C) or above.
Incompatibility with Various Substances	Reactive with strong oxidizing agents.
Hazardous Decomposition Products	Hazardous decomposition products are carbon monoxide, carbon dioxide, dense smoke, and various hydrocarbons. Exposure of polystyrene to extremely high temperatures (600 deg F or higher) may cause partial decomposition. Chemicals that may be released include styrene monomer, benzene, and other hydrocarbons.

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Section 11. Toxicological Information

Acute Toxicity

Ingestion	Single dose oral LD50 has not been determined. Typical for this family of materials, estimated. LD50,Rat > 5,000 mg/kg
Dermal	The dermal LD50 has not been determined. Typical for this family of materials, estimated. LD50,Rabbit > 2,000 mg/kg.
Inhalation	The LD50 has not been determined.
Eye damage / Irritation	Solid or dust may cause irritation or corneal injury due to mechanical action. Elevated temperature may generate vapor levels sufficient to cause eye irritation. Effects may include discomfort and redness.
Skin corrosion / irritation	Prolonged contact is essentially nonirritating to skin. Mechanical injury only. Under normal processing conditions, material is heated to elevated temperatures, contact with the material may cause thermal burns.
Sensitization	
Skin	No relevant information found.
Respiratory	No relevant information found.
Repeated Dose Toxicity	Additives are encapsulated in the product and are not expected to be released under normal Processing conditions or foreseeable emergency.
Chronic Toxicity and Carcinogenicity	No relevant information found.
Development Toxicity	No relevant information found.
Reproductive Toxicity	No relevant information found.

Section 12. Ecological Information

Ecotoxicity	This product is essentially a high molecular weight polymer , not regarded as ecotoxic .
Persistence and degradability	This product is not readily biodegradable. Persistent in the environment.
Bioaccumulation	May accumulate in soil and water systems.
Fire Hazards in Presence of Various Substances	No specific information is available in our database regarding the flammability of this product in presence of various materials.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not expected. Risks of explosion of the product in presence of static discharge: Possible. Risk of explosion from dust accumulation of this product is possible. See MSDS section 7 Handling for more information.

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Section 13. Disposal Considerations

Description and handling Of residues	The same safety consideration apply to scrups / waste as apply to the preparation.
Appropriate methods of Disposal of preparation	Residues should be disposed of as required by national and local regulations.
Incineration	Must be done under approved conditions, possibly with energy recovery and only at suitable facilities equipped with a scrubber for the treatment of fumes before their release into the atmosphere.
Recycling	After suitable treatment (cleaning, grinding, etc.) , the preparation can be safety re-used, as is or mixed with fresh material , when this is compatible with the intended final application.
Landfilling	Should be avoided as far as possible. If unavoidable , use approved landfill sites.
National and Community provisions relating Waste Information	Directive 91/156/EEC of 18 March 1991; Directive 91/189/EEC of 12 December 1991; Directive 91/62/EEC of 20 December 1994.
Consult your local or regional authorities.	Transfer to an approved disposal area in accordance with federal, state, and local regulations.

Section 14. Transport Information

IMDG

Proper Shipping Name	Not regulated.
Hazard class	Not regulated.
UN Number	Not regulated.
Packing Group	Not regulated.
Special Provisions	None.
Marine Pollutant	Not applicable
Environmental hazard	

RID

Proper Shipping Name	Not regulated
Hazard class	Not regulated
UN Number	Not regulated
Packing Group	Not regulated
Special Provisions	None
Environmental hazard	Not applicable

ADR

Proper Shipping Name	Not regulated
Hazard class	Not regulated
UN Number	Not regulated
Packing Group	Not regulated

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Special Provisions	None
Environmental hazard	Not applicable

Section 15. Regulatory Information

Thailand : Hazardous Substance Act,B.E.2535	This product does not contain substances listed in Thai Hazardous substances Act.
Thailand : Notification of Ministry of Interior (Occupational Health and Safety in Chemical)	All components of this product are not listed.
HCS Classification	This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
International Regulations DSCL (EEC)	This product is not classified according to EU legislation
International List	**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):** Not determined. **Korea inventory (KECI):** This material is listed or exempted.
DISCLAIMER	• This Applications specified herein is for reference only and not suitable for using in the manufacturing of any products in medical and pharmaceutical sectors. • Determination of suitability of the product for the use and purpose shall be the customer's responsibility. Customer is obligated to inspect and test the product for such suitability. Customer is responsible for appropriate, safe, legal use processing and handling of the product. • To our best knowledge, information contained herein is true and accurate as of the date of its publication. However, we make no representations or warranties with respect to accuracy, reliability and completeness of the information contained herein for any purpose. • No warranties, express or implied, which extend beyond the description herein are given by us. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose. • We assume no liability for any use of the product in combination with other materials. The information contained herein entirely relates to the product when it is not used in combination with any third party's materials.

Section 16. Other Information

Product Literature	Additional information on this product may be obtained by calling your sales or customer service contact.

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