1. IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: VINYL ESTER
Other means of identification: None
Intended/Recommended Use: Recommended for Industrial and/or Professional use only
Uses advised against: Not available
Supplier: BosTech Polymer LLC.FZ
Address: Office 332, European Business Centre, Dubai Investment Park 1, Dubai, United Arab Emirates
Telephone: +971 54 2943817
E-mail: info@bostechpolymer.com

2. HAZARDS IDENTIFICATION

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals(GHS) including Work, Health and Safety regulations, Australia.

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. Additional GHS classification or other information may be included in this section but has not been adopted by Work Health and Safety (WHS) Regulations.

GHS Classification
Flammable Liquids Hazard Category 3
Toxic To Reproduction Hazard Category 2
Target Organ Systemic Toxicant (TOST) - Repeated Exposure Hazard Category 1
Target Organ Systemic Toxicant (TOST) - Single Exposure Hazard Category 3
Skin Corrosion / Irritation Hazard Category 2
Serious Eye Damage / Eye Irritation Hazard Category 2A
Aquatic Environment Acute Hazard Category 2
Aquatic Environment Chronic Hazard Category 3

LABEL ELEMENTS

Name of Pictogram(s)
Flame
Health hazard
Exclamation mark

Signal Word
DANGER

Hazard Statements

Flammable
liquid and vapour Suspected of damaging fertility or the unborn child
Causes damage to organs through prolonged or repeated exposure
May cause respiratory irritation
Causes skin irritation
Causes serious eye irritation
Toxic to aquatic life
Harmful to aquatic life with long-lasting effects

Precautionary Statements
Prevention

Keep away from heat, sparks, and open flame. - No smoking. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting, and other equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves and eye/face protection. Wash hands thoroughly after handling. Avoid release to the environment. Use only outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe in vapors or spray mist.

Response
IF ON SKIN (or hair): Remove/take off all contaminated clothing immediately. Rinse skin with water/shower. IFON SKIN: Wash with plenty of soap and water. Specific treatment - refer to supplemental first aid instructions. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash it before reuse. IFINEYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell. Get medical attention/advice if you feel unwell. If you are exposed or concerned, get medical advice/attention.

Storage
Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Disposal
Dispose of contents/container in accordance with local and national regulations. OTHER HAZARDS Polymerization may occur from excessive heat, contamination, or exposure to direct sunlight.

3. COMPOSITION AND INFORMATION ON INGREDIENTS Substance, Mixture or Article? Mixture

Component / CAS No.	%	GHS Classification
Styrene 100-42-5	40-50	Flam. Liq. 3 (H226) Repr. 2 (H361d) Acute Tox. 4 (H332) STOT RE 1 (H372) STOT Single 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Asp. Tox. 1 (H304) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)

Other non-hazardous ingredients to 100% Additional GHS classification or other information may be included in this section but has not been adopted by Work Health and Safety (WHS) Regulations. See Section 16 for the full text of H phrases.

4. FIRST-AID MEASURES

Symptoms and Signs of Poisoning:
Itching, rashes, hives, burning sensation.

Eye Contact:
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep the eye wide open while rinsing. Do not rub the affected area. Remove contact lenses if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin Contact:
Wash immediately with plenty of water and soap. It may cause an allergic skin reaction. In the case of skin irritation or allergic reactions, see a doctor. Get medical attention if irritation develops and persists. Wash off immediately with soap and plenty of water for at least 15 minutes.

Ingestion:
Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a doctor.

Inhalation:
Remove to fresh air. If you are exposed or concerned, get medical advice/attention. If symptoms occur, get medical attention immediately.

Notes To Physician:
May cause sensitisation in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Carbon dioxide. dry chemical. Alcohol resistant foam. Water spray.

Unsuitable Extinguishing Media:
full water jet.

Protective Equipment:
Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

Special Hazards:
It is flammable and may be ignited by heat, sparks, or flames. There is a risk of ignition. Keep the product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. The product is or contains a sensitiser. It may cause sensitization by skin contact.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes, or clothing. Ensure adequate ventilation. Keep people away from and upwind of the spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in the immediate area). Pay attention to flashback. Take action to prevent static discharge. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Ventilate the area.

Methods For Containment:
Stop leak if safe to do so. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches, and waterways. Absorb with earth, sand, or other non-combustible material and transfer to containers for later disposal.

Methods For Cleaning Up:
Take action to prevent static discharge. Dampen. Soak up with inert absorbent material. Mechanically remove it, placing it in appropriate containers for disposal.

Environmental Precautions:
Avoid release to the environment.

References to other sections:
See Sections 7, 8, and 13 for additional information.

7. HANDLING AND STORAGE

Handling
Precautions:

Keep away from heat, sparks, and open flame. - No smoking. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting, and other equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves and eye/face protection.

Wash hands thoroughly after handling. Avoid release to the environment. Use only outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe in vapors or spray mist.

Special Handling Statements:
Use personal protection equipment. Avoid contact with skin and eyes. Avoid breathing vapor or mist. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Take action to prevent static discharge. Use grounding and bonding connections when transferring this material to prevent static discharge, fire, or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practices. Avoid contact with skin, eyesor clothing. Do not eat, drink, or smoke when using this product. Remove contaminated clothing and shoes without delay. Ensure adequate ventilation. Take off contaminated clothing and wash it before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid excessive heat, contamination, or exposure to direct sunlight to prevent polymerization. Containers must be bonded and grounded when pouring or transferring

Storage
Keep the container tightly closed and dry in a cool, well-ventilated place. Keep away from heat, sparks, flames, and other sources of ignition (i.e., pilot lights, electric motors, and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of reach of children. Store locked up. Storeseparately. Hazardous polymerisation may take place during a fire due to heat. Closed containers could violently rupture.

Storage Temperature: Ambient temperature
Reason: Quality.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION CONTROL
PARAMETERS - Limits Styrene 100-42-5

Australia: 50 ppm (TWA) 213 mg/m3 (TWA) 100 ppm (STEL) 426 mg/m3 (STEL)
New Zealand: 50 ppm (TWA) 213 mg/m3 (TWA) 100 ppm (STEL) 426 mg/m3 (STEL) (skin)

ACGIH (TLV): 40 ppm (STEL) 20 ppm (TWA)

Biological Exposure Limit(s)

Styrene 100-42-5 Biological Exposure Indices (ACGIH) 400 mg/g creatinine (urine - end of shift) 40 µg/L (urine - end of shift)

Engineering Measures: Ensure adequate ventilation, especially in confined areas.

Respiratory Protection: Where exposures exceed the established exposure limit, respiratory protection is recommended for the material and level of exposure. Where exposures are below the established exposure limit, no respiratory protection is required. Where respiratory protection is required, use a respirator selected and in accordance with AS/NZS1715 and AS/NZS1716.

Eye protection: Tight sealing safety goggles. Face protection shield.

Skin Protection: Wear antistatic footwear, fire— or flame-resistant/retardant clothing, plastic or rubber gloves, suitable protective clothing, and an apron.

Hand protection: Wear protective gloves. Barrier creams may help protect exposed areas of the skin; however, they should not be applied once exposure has occurred. Replace gloves immediately when torn or if any change in appearance(dimension, color, flexibility, etc.) is noticed.

Additional Advice: When using, do not eat, drink, or smoke. Regular cleaning of equipment, work area, and clothing is recommended. Do not eat, drink, or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product. Wash your hands before breaks and after work. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Washcontaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES
INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Colour: amber
Appearance: clear liquid
Odor: characteristic styrene Odor
Threshold: See Section 8 for exposure limits.
pH: Not available
Melting Point: Not available
Boiling Point: 145 °C (based on components)
Flash point: 31 °C Tag Closed Cup
Evaporation Rate: 0.49
Flammable Limits (% By Vol): Lower: 1.1 Upper: 6.1
Vapor Pressure: 6 hPa, 20°C Derived from solvent
Vapour density: 3.6 Derived from solvent
Specific Gravity/Density: 1.00 g/cm³
Solubility In Water: Insoluble
Partition coefficient (n-octanol/water): Not available
Autoignition temperature: 490 °C

Decomposition Temperature: Not available
Viscosity (Kinematic): 300 mm²/s
Viscosity (Dynamic): < 300 mPa.s
Explosive Properties: Not available
Oxidizing Properties: Not available

OTHER INFORMATION
Fat Solubility (Solvent-Oil): Not available
Percent Volatile (% by wt.): Not available
Solids Content: Not available
Saturation In Air (% By Vol.): Not available
Acid Number (mg KOH/g): Not available
Hydroxyl Value (mg KOH/g): Not available
Volatile Organic Content (1999/13/EC): Not available

10. STABILITY AND REACTIVITY

Reactivity: No information available
Stability: Stable.
Conditions to Avoid: Heat, flames, and sparks.
Polymerization: May occur
Conditions To Avoid: HAZARDOUS POLYMERISATION MAY OCCUR UPON DEPLETION OF INHIBITOR.
Materials To Avoid: Strong acids Strong bases Strong oxidizing agents.
Hazardous Decomposition Products: styrene

11. TOXICOLOGICAL INFORMATION
Routes of exposure are likely to be the respiratory system, oral, skin, and eyes.

HEALTH HAZARD INFORMATION

Acute toxicity - oral: Not Classified
Acute toxicity - dermal: Not Classified
Acute toxicity - inhalation: Not Classified
Skin corrosion/irritation: Causes skin irritation
Serious eye damage/eye irritation: Causes serious eye irritation
Respiratory sensitization: Not Classified
Skin sensitization: Not Classified
Carcinogenicity: Not Classified
Germ cell mutagenicity: Not Classified
Reproductive toxicity: Suspected of damaging fertility or the unborn child
Specific target organ toxicity (single exposure): May cause respiratory irritation.
Specific target organ toxicity (repeated exposure): Causes damage to organs through prolonged or repeated exposure.
Route of Exposure: inhalation
Affected Organs: Ears
Aspiration hazard: Not Classified

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PRODUCT TOXICITY INFORMATION

ACUTE TOXICITY DATA

oral	rat	Acute LD50	> 2000 mg/kg
dermal	rabbit	Acute LD50	> 2000 mg/kg
inhalation	rat	Acute LC50 4 hr	> 20 mg/l (Vapors)

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	Skin	Irritating to skin.
Acute Irritation	eye	Irritating to eyes.

ALLERGIC SENSITIZATION

Sensitization	Skin	No information available
Sensitization	respiratory	No information available

SUBACUTE/SUBCHRONIC TOXICITY

Specific target organ toxicity (repeated exposure): Causes damage to ears through prolonged or repeated exposure by inhalation.

GENOTOXICITY

Assays for Gene Mutations
Ames Salmonella Assay — No data

Reproductive toxicity
Contains a known or suspected reproductive toxin

Chronic toxicity
Avoid repeated exposure. May cause adverse liver effects. Contains a known or suspected reproductive toxin.

OTHER INFORMATION
The product toxicity information above has been estimated.

HAZARDOUS INGREDIENT TOXICITY DATA

Styrene has acute oral LD50 (rat) and acute dermal LD50 (rat, rabbit) values of >5000 and >2000 mg/kg, respectively.The inhalation LC50 (rat) has been reported as 11.8 mg/L (vapor) following a 4-hour exposure. Acute overexposuretostyrene vapor may cause moderate eye and nasal irritation as well as drowsiness, headache and central nervoussystem depression. Styrene is a moderate skin irritant. No allergic reactions were observed in animal studies. Inanimal studies, styrene induced micronuclei, sister chromatid exchanges and DNA strand breaks. In vitrotestsshowed styrene to cause sex- linked recessive lethal mutations in Drosophila (fruit flies). Styrene has beenshowntocause lung tumors in mice. Epidemiological studies of styrene exposure in humans are not conclusive duetotheinadequate control of variables. Causes damage to ears through prolonged or repeated exposure by inhalation. Ingestion of styrene can initiate an aspiration hazard. The International Agency for Research on Cancer (IARC) listsstyrene as an IARC 2B carcinogen (possibly carcinogenic to humans). Animal studies have shown someadversedevelopmental effects.

Inventory Multi-tiered Assessment and Prioritization (IMAP)
This product contains one or more Stage One Chemical(s).

Component / CAS No.	Stage One Chemicals
Styrene 100-42-5	Tier II Final (Human Health);Remaining Priority (Environment) NICNAS holds data;Concern has been raised overseas

12. ECOLOGICAL INFORMATION

Overall Environmental Toxicity: Toxic to aquatic life. Harmful to aquatic life with long lasting effects. The ecological assessment for this material is based on an evaluation of its components.

ECOTOXICITY Not available

BIOACCUMULATIVE POTENTIAL Not available

PERSISTENCE AND DEGRADABILITY Not available

MOBILITY IN SOIL Not available

OTHER ADVERSE EFFECTS HAZARD TO THE OZONE LAYER Not available

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Fish
Styrene (100-42-5)	LC50 = 3.24 - 4.99 mg/L - Pimephales promelas (96h)

Component / CAS No.	Toxicity to Water Flea
Styrene (100-42-5)	EC50 = 4.7 mg/L - Daphnia magna (48h) NOEC = 1.01 mg/L - Daphnia magna (21d) LC50 = 9.5 mg/L - Hyalella azteka (96h)

Component / CAS No.	Toxicity to Algae
Styrene (100-42-5)	EC50 = 6.3 mg/L - Pseudokirchneriella subcapitata (96h)

Component / CAS No.	Partition coefficient
Styrene (100-42-5)	2.95

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods
The company encourages the recycle and reuse of products and packaging, where possible and permitted.

Product disposal
When recycling or reuseing is not possible, the company recommends that our products, especially when classified as hazardous, be disposed of at approved facilities. All local and national regulations should be followed.

Packaging disposal
Handle contaminated packages in the same way as the product itself. Disposal of emptied and cleaned packaging must be made in accordance with applicable local and national regulations.

Disposal-relevant information
Do not release directly or indirectly to surface water, ground water, soil or public sewage system.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulationsforspecific requirements.

Regulatory Body	Dangerous Goods?	Proper Shipping Name	Hazard Class	UN Number	Packing Group	Transport Label Required	HAZCHEM Code
Australia (ADG)	Yes (X)	RESIN SOLUTION	Class 3	UN1866	III	Flammable liquid	•3Y
IMO	Yes (X)	RESIN SOLUTION	Class 3	UN1866	III	Flammable liquid	–
ICAO / IATA	Yes (X)	RESIN SOLUTION	Class 3	UN1866	III	Flammable liquid	–

SPECIAL PRECAUTIONS FOR USER: Keep cool. Protect from sunlight.

15. REGULATORY INFORMATION

Safety, health, and environmental regulations specific to the product in question

Ozone Depleting Substances (Regulation (EC) No 1005/2009): Not applicable

Persistent Organic Pollutants (Regulation (EC) No 850/2004): Not applicable

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP): Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons(SUSMP)

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Poison Schedule Number: S5

Work Health and Safety Regulations (Banned and/or restricted) This product contains one or more substance(s) subject to prohibition, authorization, or restriction. Verify that requirements related to using, handling, and storing substances subject to prohibition, authorization, or restriction are met.

Inventory Information

Australia: All components of this product are included in the Australian Inventory of Chemical Substances(AICS)or are not required to be listed on AICS.

New Zealand: This product is approved or exempt under the Hazardous Substances and NewOrganisms(HSNO) Act.

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