

SAFETY DATA SHEET

Company Name: GranQuartz

Product Name: Legend Polyester Adhesive Flowing

Issue Date: 8/4/14

Revision Date: 6/1/15

SDS Number: 205-00600

Section I –Product and Company Identification

Product Identifier: Legend Polyester Adhesive Flowing

Product Description/Use: Polyester Adhesive and Filler

Product Code: 00600

Chemical Family: Polyester

Company:

GranQuartz

4963 South Royal Atlanta Drive

Tucker, GA 30084

Phone: (800) 458-6222

24 Hour Emergency Telephone Number:

CHEMTREC 800-424-9300

Section II – Hazards Identification

GHS Hazard Classification(s):

Flammable Liquid: Category 3

Skin Irritation: Category 2

Germ Cell Mutagenicity: Category 2

Reproductive Toxicity: Category 1B

Acute Aquatic Toxicity: Category 1

Specific Target Organ Systemic Toxicity - Single Exposure: Category 1, Central Nervous System

Specific Target Organ Systemic Toxicity - Single Exposure: Category 3, Respiratory Tract Irritation

Specific Target Organ Systemic Toxicity - Repeated Exposure: Category 1, Blood System, Liver, Nervous System, Respiratory tract/organ

Acute Toxicity: Category 4, Inhalation

Eye Irritation: Category 2A

Carcinogenicity: Category 2

Aspiration Hazard: Category 1



Symbols:

Hazard Statements:

H226: Flammable liquid and vapor.

H304: Maybe fatal if swallowed and enters airways.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H332: Harmful if inhaled.

H335: May cause respiratory irritation.

H341: Suspected of causing genetic defects.

H351: Suspected of causing cancer.

Precautionary Statements:

P201: Obtain special instruction before use.

P202: Do not handle until all safety precautions have been read and understood.

P210: Keep away from heat/sparks/open flames/hot surfaces - No smoking.

P233: Keep container tightly closed.

P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting equipment.

P242: Use only non-sparking tools.

Signal Word(s): Danger

H360: May damage fertility or unborn child.

H370: Causes damage to organs (Central Nervous System)

H372: Causes damage to organs (blood system, LIver, Nervous system, respiratory tract/organ) through prolonged or repeated exposure.

H401: Toxic to aquatic life.

P243: Take precautionary measures against static discharge.

P260: Do not breathe dust/fume/gas/mist/vapor/spray.

P264: Wash skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

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Hazards not otherwise classified: None known.

Section III – Composition/Information on Ingredients

Substance/Mixture: Mixture

<u>Ingredient</u>	<u>Synonym(s)</u>	<u>% (By Weight)</u>	<u>CAS#</u>	<u>EINECS No.</u>
Polyester Resin	N/A	60-70%	N/A	N/A
Styrene	Phenylethene, Ethenyl benzene, Ethenylbenzene, Vinyl Benzene, Styrol, Styrolene, Cinnamene, Cinnamenol, Cinnamol.	30-35%	100-42-5	202-851-5

Section IV – First Aid Measures

If Swallowed: DO NOT INDUCE VOMITING (aspiration hazard). Seek immediate medical aid.

Skin Contact: Remove contaminated clothing. Wash with soap and water. Consult a physician if any signs or symptoms described in this document occur. Wash contaminated clothing.

If Inhaled: Remove victim from exposure. If victim is unconscious, administer artificial respiration and/or oxygen as needed. Seek medical aid.

Eyes: Flush with copious amounts of water for 15 minutes. Seek immediate medical aid.

Note to Physicians: Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid which can cause pneumonitis.

Section V - Fire Fighting Measures

Suitable Extinguishing Media: Water Spray, foam, dry chemical, carbon dioxide or any Class B extinguishing agent.

Unsuitable Extinguishing Media: Do not use water jet.

Special Fire Fighting Procedures: Firefighters and others exposed to vapors or products of combustion should wear self-contained breathing apparatus and full protective clothing. Equipment should be thoroughly decontaminated after use.

Unusual Fire and Explosion Hazards: At elevated temperatures, such as in a fire, polymerization may take place. If polymerization takes place in a closed container, there is the possibility of violent rupture of the container. Product vapors may form an explosive mixture in air.

Hazardous Products of Combustion: Decomposition products may include the following material: carbon oxides, nitrogen oxides.

Other Remarks: Liquid and vapor may cause flash fire or ignite explosively. Vapor is heavier than air and may settle in low places or spread long distances to a source of ignition and flashback. Explosive atmospheres may linger. Closed containers can rupture and release toxic vapors or decomposition products.

Section VI - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

For Non-Emergency Personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Do not touch or walk through spilled material. Provide adequate ventilation.

For Emergency Responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. See also the information for non-emergency personnel.

Methods and Materials for Containment and Cleaning Up

Small Spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

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Large Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section VII - Handling and Storage

Precautions for Safe Handling

Protective Measures: Put on appropriate personal protection equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not breath vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined space unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible materials, kept tightly closed when not in use. Store and use away from heat, sparks open flame or any other ignition source. Use explosion-roof electrical (ventilating, lighting and material handling) equipment. Use only on-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do no reuse container.

Advice on General Occupational Health: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for Safe Storage, Including and Incompatibles: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Segregate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do no store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Refer to the product label and/or technical data sheet for further information.

Do not store in temperatures greater than 100°F.

Shelf Life: One (1) year when stored at room temperatures.

Section VIII - Exposure Controls/Personal Protection

Likely Routes of Exposure: Inhalation, Dermal, Ingestion.

Control Parameters

Occupational exposure Limits:

Ingredient Name

Styrene

Exposure Limits

ACGIH TLV (United States, 4/2014)

TWA: 20 ppm - 8 hours

TWA: 85 mg/m³ - 8 hours

STEL: 40 ppm - 15 minutes

STEL: 170 mg/m³ - 15 minutes

OSHA PEL 1989 (United States, 3/1989)

TWA: 50 ppm - 8 hours

TWA: 215 mg/m³ - 8 hours

STEL: 100 ppm - 15 minutes

STEL: 425 mg/m³ - 15 minutes

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OSHA PEL Z2 (United States, 2/2013)

TWA: 100 ppm - 8 hours

CEIL: 200 ppm

AMP: 600 ppm - 5 minutes

NIOSH REL (United States, 10/2013)

TWA: 50 ppm - 8 hours

TWA: 215 mg/m³ - 8 hours

STEL: 100 ppm - 15 minutes

STEL: 425 mg/m³ - 15 minutes

Engineering Controls: Use only with adequate ventilation to keep the airborne concentrations of this material below the recommended exposure standard. Engineering controls also need to keep gas vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental Exposure Controls: Emissions from ventilation of work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. .

Individual Protection Measures

Hygiene Measures: Wash Hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/Face Protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gasses or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Hand Protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other Skin Protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section IX – Physical and Chemical Properties

Physical State: Viscous Liquid

Color: Transparent Yellow

Odor: Styrene

Odor Threshold: 0.017~1.9 ppm (Detect)
0.15 ppm (Recognition)

pH: Not Available

Melting Point: -23.8°F/-30.6°C (Styrene)

Boiling Point: 293°F/145°C (Styrene)

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Flash Point: Closed Cup: 88°F/31.1°C (Styrene)

Burning Time: Not Applicable

Burning Rate: Not Applicable

Evaporation Rate: <1 (Butyl acetate) = 1)

Flammability (solid, gas): Not Available

Lower and Upper Explosive (Flammable) Limits: Lower: 1.1%
Upper: 6.1%

Vapor Pressure: 4.3 mm Hg (0.57 kPa) @ 68°F/20°C (Styrene)

Vapor Density: 3.6 (Air = 1) (Styrene)

Relative Density: 1 to 1.2 (Water = 1)

Solubility: Immiscible in water

Partition Coefficient: n-Octanol/water : Not Available

Auto-Ignition temperature: 914°F/490°C

Decomposition Temperature: Not Available

SADT: Not Available

Viscosity: Not Available.

Molecular Weight: 10,000-15,000

VOC Content: 305 - 356 g/l (as supplied)

<25 g/l (as applied)

Section X - Stability and Reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical Stability: Material is stable

Hazardous Polymerization: Yes

Conditions to avoid: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatibility (materials to avoid): Strong acids and oxidizing agents

Hazardous Decomposition: Heating of this material to decomposition may cause the emission of irritating, acrid fumes. Under normal storage conditions and use, hazardous decomposition products should not be produced.

Section XI - Toxicological Information

Acute Toxicity:

<u>Product/Ingredient Name</u>	<u>Result</u>	<u>Species</u>	<u>Dose</u>	<u>Exposure</u>
Styrene	LC50 Inhalation Gas	Rat	2770 ppm	4 hours
	LC50 Inhalation Vapor	Rat	11,800 mg/m ³	4 hours
	LD50 Oral	Rat	2,650 mg/kg	-

Irritation/Corrosion:

<u>Product/Ingredient Name</u>	<u>Result</u>	<u>Species</u>	<u>Score</u>	<u>Dose</u>	<u>Observation</u>
Styrene	Eyes - Mild Irritant	Human	-	50 ppm	-
	Eyes - Moderate Irritant	Rabbit	-	24 hours-100 mg	-
	Eyes - Severe Irritant	Rabbit	-	100 mg	-
	Skin - Mild Irritant	Rabbit	-	500 mg	-
	Skin - Moderate Irritant	Rabbit	-	100%	-

Sensitization: Not available

Mutagenicity: Not available

Carcinogenicity: Not available

Conclusion/Summary: Styrene manufacturers have determined that the GHS Hazard Classification criteria has not been met.

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Classification:

Product/Ingredient Name OSHA IARC NTP

Styrene - 2B* Reasonably anticipated to be a human carcinogen.

* *The International Agency for Research on Cancer (IARC) has classified styrene as possibly carcinogenic to humans (class 2B). The IARC 2B classification is not based on significant new evidence that styrene might be a carcinogen, but on a revised IARC classification scheme and new data on styrene oxide. The Styrene Information and Research Center does not agree with the reclassification and has published the following statement: "Recently published studies tracing 50,000 workers exposed to high occupational levels of styrene over a period of 45 years showed no association between styrene and cancer, no increase in cancer among styrene workers (as opposed to the average among all workers), and no increase in mortality related to styrene."*

Reproductive Toxicity: Not available

Teratogenicity: Not available

Specific Target Organ Toxicity (Single Exposure): Not available

Specific Target Organ Toxicity (Repeated Exposure): Not available

Aspiration Hazard: Not available

Likely Routes of Exposure: Inhalation, Dermal, Ingestion.

Potential Acute Health Effects:

Eye Contact: Causes serious eye irritation.

Inhalation: Harmful if inhaled.

Skin Contact: Causes skin irritation.

Ingestion: Irritating to mouth, throat and stomach.

Symptoms Related to the Physical, Chemical and Toxicological Characteristics:

Eye Contact: Adverse symptoms may include the following - Pain or Irritation. Watering. Redness.

Inhalation: No specific data.

Skin Contact: Adverse symptoms may include the following - Irritation. Redness.

Ingestion: No specific data.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposures:

Short Term Exposures:

Potential Immediate Effects: Not available.

Potential Delayed Effects: Not available.

Long Term Exposures:

Potential Immediate Effects: Not available.

Potential Delayed Effects: Not available.

Potential Chronic Health Effects: Not Available.

General: Not available.

Carcinogenicity: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental Effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical Measures of Toxicity:

Acute Toxicity Estimates

<u>Route</u>	<u>ATE Value</u>
Oral	2,650.8 mg/kg
Inhalation (gases)	2,770.9 ppm
Inhalation (vapors)	11.8 mg/l

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Section XII - Ecological Information

Toxicity:

<u>Product/Ingredient Name</u>	<u>Result</u>	<u>Species</u>	<u>Exposure</u>
Styrene	Acute EC50 1400 µg/l Fresh Water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 720 µg/l Fresh Water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 4700 µg/l Fresh Water	Daphnia - Daphnia magna	48 hours
	Acute LC50 13000 µg/l Fresh Water	Crustaceans - Hyalella azteca	48 hours
	Acute LC50 4020 µg/l Fresh Water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 63 µg/l Fresh Water	Algae - Pseudokirchneriella subcapitata	96 hours

Persistence and Degradability: Not Available

Bioaccumulative Potential:

<u>Product/Ingredient Name</u>	<u>LogPow</u>	<u>BCF</u>	<u>Potential</u>
Styrene	0.35	13.49	low

Mobility in Soil:

Soil/water Partition Coefficient (Koc): Not available

Other Adverse Effects: No known significant effects or critical hazards.

Section XIII - Disposal Considerations

The information in this section contains generic advice and guidance. The list of identified uses in Section 1 should be consulted for any available use-specific information.

Disposal Methods: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. Disposal of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid disposal. Attempt to use product completely in accordance with intended use. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is no feasible.

Special Precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, water ways, drains and sewers.

Section XIV - Transportation Information

DOT (DEPARTMENT OF TRANSPORTATION)

Technical Name: Resin Solution

Hazard Class: 3

NA/UN Number: 1866

Packing Group: III

Marine Pollutant: No

Please refer to DOT regulations for more info

Canada (TDG)

Technical Name: Resin Solution

Hazard Class: 3

NA/UN Number: 1866

Packing Group: III

Please refer to TDG Regulations for more info

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International Air Transport Association (IATA)

Technical Name: Resin Solution

Hazard Class: 3

NA/UN Number: 1866

Packing Group: III

ERG Code: 3L

Marine Pollutant: No

Please refer to IATA regulations for more info.

International Maritime Organization (IMO)

Technical Name: Resin Solution

Hazard Class: 3

NA/UN Number: 1866

Packing Group: III

EmS: F-E, S-E

Marine Pollutant: No

Please refer to IMO regulations for more info.

Special Precautions for User: Transport within users premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the products know what to do in the event of an accident or spillage.

Section XV - Regulatory Information

United States Federal Regulations:

Sara Title III - Section 311/312

<u>Criteria</u>	<u>Yes/No</u>
Immediate (Acute) Health Effects:	Yes
Chronic (Delayed) Health Effects:	Yes
Fire Hazard:	Yes
Sudden Release of Pressure Hazard:	No
Reactivity:	No

Sara Title III - Section 313

<u>Criteria</u>	<u>Product/Ingredient Name</u>	<u>CAS Number</u>	<u>%</u>
Form R - Reporting Requirements	Styrene	100-42-5	30-35
Supplier Notification	Styrene	100-42-5	30-35

State Regulations:

Massachusetts: The following components are listed: Styrene Monomer

New York: The following components are listed: Styrene

New Jersey: The following components are listed: Styrene Monomer

California: SCAQMD Rule 1162 establishes specific process, control, housekeeping, and recordkeeping requirements for fabrication operations using polyester resin materials. It is the responsibility of the fabricator to ensure compliance with these requirements.

Canada:

Canadian WHMIS Classification: B2, D2A, D2B

Ingredient Disclosure List: Styrene (100-42-5)

Section XVI - Other Information

Hazardous Material Information System (United States):

Health	2
Flammability	3
Physical Hazards	1

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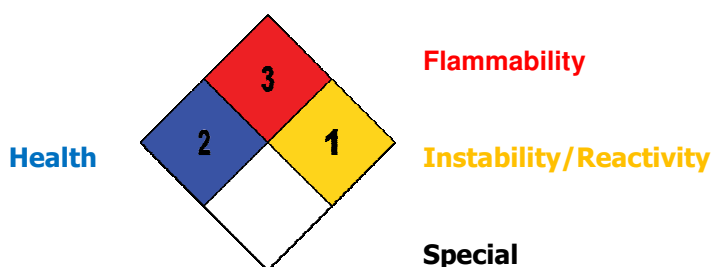
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Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J.J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (United States):



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