SAFETY DATA SHEET

PRODUCT NAME: Avonite Surfaces Inlay Resin
MSDS ISSUE DATE: 12/1/04
SDS REVISION DATE: 3/28/14

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME: Avonite Surfaces Inlay Resin
Synonyms: N/A
Chemical Name: Unsaturated Polyester Resin

1.2 PRODUCT USE: Solid Surface Resin

1.3 MANUFACTURER:

Aristech Surfaces LLC
7350 Empire Dr.
Florence, KY 41042

1.4 CONTACT INFORMATION

Email: info@aristechsurfaces.com

Emergency Phone: **Fax:** (859)-283-7378
(859)- 283-1501 (8AM- 5PM Mon-Fri)
CHEMTREC-(800)- 424-9300 (Off-Hour Emergencies); CCN 1676

SECTION 2: HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF SUBSTANCE:

PRODUCT **Classification Information:** Not Classified.

INGREDIENT **Classification Information:**

Preliminary Statement:

These classifications/hazards are pertaining to the constituents of the marketed product.

Classification according to Regulation (EC) No 1272/2008[CLP]:

Acute Toxicity - Category 4
Eye Irritation - Category 2
Flammable Liquid - Category 3
Skin Irritation - Category 2
Specific Target Organ Toxicity (Single Exposure) - Category 3

2.2 LABEL ELEMENTS:

WARNING!!!

FLAMMABLE - IRRITANT

Signal Word: WARNING!

Relevant Routes of Exposure: Inhalation, eye and skin.

CLP/GHS Statements:

- **Hazard Statement(s):**

  - H226 Flammable liquid and vapor
  - H315 Causes skin irritation
  - H319 Causes serious eye irritation
  - H332 Harmful if inhaled
  - H335 May cause respiratory irritation

- **Precautionary statement(s):**

Prevention:

  - P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
  - P264 Wash skin thouroughly after handling.
  - P271 Use only outdoors or in a well-ventilated area.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

  - P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
  - P304 + P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
  - P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  - P312 Call a POISON CENTER or doctor/physician if you feel unwell.
  - P332 + P313 IF SKIN irritation occurs: Get medical advice/attention.
  - P337 + P313 IF eye irritation persists: Get medical advice/attention
  - P362 Take off contaminated clothing and wash before reuse.
  - P370 + P378 In case of fire: Use foam, carbon dioxide, or dry chemicals to extinguish fire. Water may be ineffective, but should be used to cool fire-exposed containers. Water spray can also be used to disperse vapors and to flush spills away from exposures.for extinction.

Storage:

  - P403 + P233 + P235 Store in a well-ventilated place. Keep container tightly closed. Keep cool.
  - P405 Store locked up.

Disposal:

  - P501 Dispose of in accordance with local, state and federal requirements. The product meets the RCRA criteria for ignitability D001. The RQ for styrene is 1000 lbs.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 COMPOSITION:

Ingredient Name	CAS No.	EC No.	% WT	DSD Classification	CLP Classification
*** Avonite Surfaces Inlay Resin**	**Mixture**	**Mixture**	**100**	**Not Classified**	**Not Classified**
Unsaturated Polyester Resin	Mixture	Mixture	50-55	Not Classified	Flam. Liq. 3 H226 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Acute Tox. 4 H332 STOT SE 3 H335(not known)  WARNING!
Styrene	100-42-5	Not Classified	45	Xn; Xi R10; R20 R36/38 S02; S23	Flam. Liq. 3 H226 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Acute Tox. 4 H332  WARNING!

* Mixture. Chemicals that follow this listed chemical are part of the listed mixture.

SECTION 4: FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

General notes:
Consult a physician. Show this safety data sheet to the doctor in attendance.

Relevant Routes of Exposure: Inhalation, eye and skin.

Inhalation:
Remove from exposure. If breathing is difficult, administer artificial respiration (mouth-to-mouth) or oxygen as indicated. Call a physician immediately.

Skin Contact:
Wash affected area with soap and plenty of water. If irritation develops, call a physician.

Eye Contact:
Flush immediately with plenty of cool water for at least 15 minutes. Call a physician immediately.

Ingestion:
DO NOT INDUCE VOMITING! Rinse mouth immediately with plenty of water. If victim is conscious and alert, give 1 glass of milk or water. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Call a physician, immediately.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:
Use foam, carbon dioxide, or dry chemicals to extinguish fire. Water may be ineffective, but should be used to cool fire-exposed containers. Water spray can also be used to disperse vapors and to flush spills away from exposures.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANTS OR MIXTURE:
Vapors are heavier than air and may travel to a source of ignition and cause a flash back. Containers may explode upon exposure to excessive heat and fire situations fire.

5.3 ADVICE FOR FIRE FIGHTERS:
Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing when fighting fires. Use cold water spray to cool fire-exposed product.

5.4 FURTHER INFORMATION:
Combustion products may include carbon dioxide, carbon monoxide and irritating or toxic smoke and fumes.

Flammable Limits in Air (% by Volume): LEL: 1.1; UEL: 6.1

Flash Point: 90 ° F (PMCC)

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:
Proper personal protective equipment should be utilized when handling this material.

6.2 ENVIRONMENTAL PRECAUTIONS:
Prevent spill from entering sewers and waterways.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:
Dike with sand or earth to prevent spill from entering sewers and waterways. Remove all ignition sources. Keep up wind of spill containment area. Ventilate spill area. All equipment used when handling this product must be grounded. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. Personal protective equipment should be used when cleaning up all spills. Styrene is on the CERCLA list of hazardous substances and spills of reportable quantities must be reported to the National Response Center (800-424-8802). The CERCLA Reportable Quantity (RQ) for Styrene is 1000 lb.

6.4 REFERENCE TO OTHER SECTION(S):
See SECTION 7 for information on Safe Handling.
See SECTION 8 for information on Personal Protective Equipment.
See SECTION 13 for information on Disposal.

SECTION 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Product is flammable. Keep away from heat, sparks and flames. Keep containers closed when not in use. Use with adequate ventilation. Bond and ground containers for transfer of this product to prevent static sparks. Avoid contact with eyes and skin. Avoid breathing mists or vapors.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Store away from heat, sparks and flames and all ignition sources. Store in cool area with a maximum storage temperature of 75°F (24°C). Store away from oxidizers and peroxides. Keep containers out of direct sunlight. Outside or detached storage is preferable. No smoking in work areas. Work in well-ventilated area. Avoid copper or copper containing alloys for storage containers.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

Exposure Limit values:

Ingredient Name	CAS #	% WT	Limit Values
*** Avonite Surfaces Inlay Resin**	**Mixture**	**100**	**---**
Unsaturated Polyester Resin	Mixture	50-55	Y (Hazardous)** 50 ppm – OSHA PEL TWA 100 ppm – OSHA STEL 15 min. 20 ppm – ACGIH TLV TWA 40 ppm – ACGIH STEL 15 min.
Styrene	100-42-5	45	Y(Hazardous)** N/A – OSHA PEL TWA N/A – ACGIH TLV TWA

** Mixture. Chemicals that follow this listed chemical are part of the listed mixture*.

*** All ingredients in quantities >1.0% (>0.1% for carcinogens) that are potentially hazardous per OSHA definitions*

Some States enforce the PELs that OSHA promulgated in 1989, which were subsequently vacated by the U.S. Supreme Court. Check with your state OSHA agency to determine which PEL is enforced in your jurisdiction.

8.2 EXPOSURE CONTROLS:

Ventilation Requirements:

Local exhaust ventilation should be used to control the emissions of air contaminants. General dilution ventilation may assist with the reduction of air contaminant concentrations.

Skin:

Wear polyvinyl alcohol, Teflon or Viton gloves to prevent skin contact. Protective aprons may be necessary where employees may be splashed. Contaminated clothing should be removed and laundered before reuse.

Eye/Face:

Wear chemical safety glasses, goggles or face shields to prevent eye contact.

Respiratory:
Respiratory equipment approved by NIOSH/MSHA for protection against organic vapors and mists is necessary to avoid inhalation of excessive air contaminants. The appropriate respirator selection depends on the type and magnitude of exposure (refer 29 CFR 1910.134 for appropriate NIOSH approved respirators and to the NIOSH Pocket Guide to Chemical Hazards, DHHS (NIOSH) Publication NO. 90-117 for equipment selection). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known or under any other circumstances where air purifying respirators may not provide adequate protection.

Other Protective Clothing/Equipment:
Emergency eye wash stations and safety showers should be available in the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: Clear viscous liquid
Boiling Point: 290°F (143°C)
Molecular/Chemical Formula: N/A
Evaporation Rate: N/A
Bulk Density: N/A
Freezing Point: N/A
Melting Point: N/A
Octanol/Water Partition Coefficient: N/A
Water/Oil Distribution Coefficient: N/A
Odor: Sharp styrene odor
Odor Threshold: 0.2 ppm styrene
Percent Volatile: 40-45%

pH Value: N/A
Physical State: Liquid
Reactivity in Water: N/A
Solubility in Water: Insoluble
Specific Gravity or Density (Water=1): 1.1
Vapor Density: 3.6
Vapor Pressure: 6.1 mmHg@20°C
Flammable Limits in Air (% by Volume): LEL:1.1; UEL: 6.1
Flash Point: 90 ° F (PMCC)

SECTION 10: STABILITY AND REACTIVITY

10.1 REACTIVITY: Reactive
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10.2 CHEMICAL STABILITY: Unstable

10.3 POSSIBILITY OF HAZARDOUS REACTIONS: May polymerize at elevated temperatures.

10.4 CONDITIONS TO AVOID: Heat, sparks and flames. Strong oxidizing agents.

10.5 INCOMPATIBILE MATERIALS:
Reacts violently with polymerization catalysts such as light, ultraviolet light, heat, benzoyl peroxide, other peroxides, persulfates, nitrates, nitric acid and other strong oxidizers. Polymerization in closed containers can cause violent reactions.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon dioxide, carbon monoxide, acrid smoke and fumes.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

VALUE	ANIMAL	ROUTES	COMPONENTS
5 g/kg	Rabbit	Dermal- LD_{50}	Styrene
24 g/m^3/4hr	Rat	Inhalation - LC_{50}	Styrene
5 g/kg	Rat	Oral - LD_{50}	Styrene

Product Based Information: No toxicological information is available for the finished product**.**

Ingredient Based Information:
Rabbits given polyester resin in the eye developed moderate corneal injury, iritis and conjunctival injury with corneal vascularization. However, all eyes healed by day 21. (USS Toxicity Test Report No. 47-503). A few embryotoxic effects have been shown in animal studies, but results are conflicting. Data on humans are inconclusive (WHO Envir Health Criteria 26-82, 1983). Chromosomal aberrations in cultured peripheral lymphocytes occurring in workers at high concentrations have been reported (no change in workers at low levels (IARC Suppl. 4:229, 1982). Styrene may cause changes in enzymes (decreased creatinine, while increasing blood urea nitrogen (BUN and SGPT Tox Appl, Pharm 75:346, 1984). Styrene has been shown to cause probable hearing loss in rats exposed for at least six hours per day for three to thirteen weeks to 800 ppm of styrene in the air, as indicated by a rise in the auditory brainstem response threshold and loss of hair cells of the inner ear. No effects were observed in rats exposed to styrene at 200 ppm for 13 weeks. Based on animal studies and human experience, no significant risk of hearing loss is expected in occupationally exposed persons.

Possible target organs: Skin and respiratory system (e.g., lungs)

Relevant Routes of Exposure: Inhalation, eye and skin.

Signs and Symptoms of Acute Overexposure:
Inhalation of high vapor concentration may irritate the eyes and mucous membranes of the nose, throat and upper respiratory tract. Symptoms may include burning sensation, coughing, sore throat, shortness of breath and dizziness. Severe overexposures can cause confusion, headache, nausea, anorexia, irritability, narcosis, drowsiness, unconsciousness, collapse, coma and possibly death. Repeated or prolonged skin contact with liquid may cause irritation or dermatitis. Symptoms may include redness, itching, dry, scaly and fissured dermatitis, rash and blisters. Eye contact may result in irritation and possible corneal damage. Symptoms may include redness, tearing, burning sensation, swelling of the eye tissue and pain. If swallowed, may cause gastrointestinal disturbances. Symptoms may include nausea, vomiting, sore throat, abdominal pain and lack of appetite. Aspiration of styrene into the lungs may cause chemical pneumonia which may be life threatening.

Signs and Symptoms of Chronic Overexposure:
Repeated and prolonged contact with the skin can cause dermatitis. Repeated eye contact may result in conjunctivitis. Chronic inhalation may result in neurologic and behavioral changes, effects on hearing and respiratory tract damage.

Medical Conditions Generally Aggravated By Exposure:
Individuals with chronic respiratory disorders may be adversely affected by any fume or airborne particulate matter exposure. Persons with preexisting skin disorders may be more susceptible to the effects of this material.

Carcinogenicity:
NTP: N/A
IARC: Yes
OSHA: N/A
ACGIH: N/A
OTHER: N/A

Additional Information:
Styrene: IARC has reclassified styrene from a Group 3 to a Group 2B, now labeled as a Possible Carcinogen to Humans. The new classification is not based on any significant new evidence that styrene might be carcinogenic, but rather on a broadening of the definition of the Group 2B classification. The previous definition only classified a substance as Group 2B if sufficient carcinogenic evidence existed in animal studies. The current definition accepts limited evidence from animal studies if it is coupled with supporting evidence from other relevant studies. Industry groups and independent research organizations are contesting the reclassification due to the current inconclusive scientific evidence linking styrene with cancer.

SECTION 12: ECOLOGICAL INFORMATION

12.1 ECOLOGICAL INFORMATION:

Sheepshead Minnow 96 hr - LC50: 9.1 mg/l (Styrene)

Terrestrial: N/A
Aquatic:. N/A
Atmospheric: N/A

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 DISPOSAL:
Dispose of in accordance with local, state and federal requirements. The product meets the RCRA criteria for ignitability D001. The RQ for styrene is 1000 lbs.

SECTION 14: TRANSPORT INFORMATION

14.1 TRANSPORT:

Proper Shipping Name: Resin Solution (Styrene)
Hazard Class: 3
ID Number: UN1866
Packing Group: III
Marine Pollutant: No

SECTION 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE EU REGULATION:

U.S. Federal Regulations:
Toxic Substances Control Act (TSCA) Inventory- Yes
Superfund Amendments and Reauthorization Act (SARA 313)- Styrene
Clean Air Act (Section 111) Volatile Organic Compound- Styrene
Clean Air Act (Section 112) Statutory Air Pollutants- Styrene
Clean Water Act (Section 311) Hazardous Substances- Styrene
Clean Water Act (Section 307) Priority Pollutant- N/A

State Regulations:
California Proposition 65 List.
This product contains a chemical listed by the State of California to cause cancer and/or birth defects or other reproductive harm.

International Regulations:
European Inventory (EINECS)- Unknown
Canadian Inventory (DSL)- Yes

SARA Hazards:
Acute: Yes
Chronic: Yes
Reactive: Yes
Fire: Yes
Pressure: No

SECTION 16: OTHER INFORMATION

16.1 ABBREVIATIONS AND ACRONYMS:

CLP= Classification, Labelling and Packaging
CAS= Chemical Abstract Service
DSD= Dangerous Substance Directive
N/A= Not Applicable
MSHA=Mine Safety and Health Administration
NIOSH=National Institute of Occupational Safety and Health
CEIL=Ceiling Limit Value
STEL=Short Term Exposure Limit
CNS= Central Nervous System
SARA= Superfund Amendment and Reauthorization Act
ACGIH=American Conference of Governmental Industrial Hygienists
OSHA=Occupational Safety and Health Administration
PNOC=Particulates Not Otherwise Classifiable
TLV=Threshold Limit Value
PEL=Permissible Exposure Limit
TWA=Time Weighted Average

16.2 KEY LITERATURE REFERENCE AND SOURCES FOR DATA:

Provided by company.

16.3 APPLICABLE STATEMENTS:

DSD Statements:

- **Risk(R) Statement(s):**

  - R10 Flammable
  - R20 Harmful by inhalation
  - R36/38 Irritating to eyes and skin

- **Safety(S) Statement(s):**

  - S02 Keep out of the reach of children
  - S23 Do not breathe gas/fumes/vapor/spray

Additional Statements:

Emergency Overview:

- WARNING! FLAMMABLE LIQUID AND VAPOR. This product may undergo hazardous polymerization. Vapor may cause flash fire. Expected to cause eye, skin and upper respiratory tract irritation. Exposure to high concentrations of mists or vapors may cause central nervous system depression with headache, drowsiness, nausea, weakness, fatigue, and loss of appetite. May cause dermatitis. Possible aspiration hazard.

Potential Health Effects:

- Eyes: Contact with eyes can cause irritation. Symptoms may include tearing, stinging, redness and swelling.
- Skin: Harmful if absorbed through skin. Acute exposures to the skin may result in irritation. Repeated or prolonged contact can cause dermatitis.
- Ingestion: If swallowed, small amounts of this product are not expected to be toxic. Ingestion can result in gastrointestinal disturbances (vomiting, nausea, diarrhea, abdominal pain and lack of appetite). Possible aspiration hazard. This product, if vomited, may be aspirated into the lungs causing chemical pneumonia which may be life threatening.
- Inhalation: Inhalation may cause upper respiratory irritation

16.4 TRAINING ADVICE:

Provide adequate information, instruction and training to operators.

16.5 DECLARE TO READER:

If you require additional information regarding any legal or regulatory requirements referred to in this SDS, we suggest that you consult with an appropriate regulatory agency, or with a professional with expertise in this area. This information is taken from sources or based upon data believed to be reliable; however, Aristech Acrylics LLC makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.

16.6 ADDITIONAL INFORMATION:

Prepared according to: Appendix D of 29 CFR 1910.1200
Regulation (EC) No 1272/2008[CLP]

SDS REVISION DATE: 3/28/14

NFPA Codes:	**HMIS Codes:**
Health: 2	Health: 2
Flammability:3	Flammability: 3
Reactivity: 2	Reactivity: 2