

SPECIAL FIREFIGHTING PROCEDURES:

WATER OR FOAM MAY CAUSE FROTHING WHICH CAN BE VIOLENT AND POSSIBLY ENDANGER THE LIFE OF THE FIREFIGHTER, ESPECIALLY IF SPRAYED INTO CONTAINERS OF HOT, BURNING LIQUID. WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE WHEN FIGHTING FIRES.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT. NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

SECTION V – REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CAN OCCUR

STABILITY: STABLE

INCOMPATIBILITY (MATERIAL TO AVOID):

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS AND OXIDIZING AGENTS

CONDITIONS TO AVOID:

EXPOSURE TO EXCESSIVE HEAT OR OPEN FLAME; STORAGE IN OPEN CONTAINERS; PROLONGED STORAGE (6 MONTHS), STORAGE ABOVE 38°C (100° F). CONTAMINATION WITH OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:

CARBON MONOXIDE, CARBON DIOXIDE, LOW MOLECULAR WEIGHT HYDROCARBONS, ORGANIC ACIDS.

SECTION VI – HEALTH HAZARD DATA

PERMISSABLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT. SEE SECTION II.

EFFECTS OF OVEREXPOSURE - FOR STYRENE:

EYES: CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.

SKIN: PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.

BREATHING: EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS AND EVEN ASPHYXIATION.

INGESTION: CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS.

FIRST AID:

SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE.

EYES: FLUSH WITH LARGE AMOUNT OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL ATTENTION.

INGESTION: DO NOT INDUCE VOMITING. KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

INHALATION: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

SECTION VII- PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES, INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL:

DESTROY BY LIQUID INCINERATION IN ACCORDANCE WITH APPLICABLE REGULATIONS. CONTAMINATED ABSORBENT SHOULD BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII –CONTROL MEASURES

RESPIRATORY PROTECTION:

IF TLV OF THE PRODUCT OR ANY COMPONENT IS EXCEEDED, A NIOSH/MSHA JOINTLY APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS UNDER SPECIFIED CONDITIONS. (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION:

PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES:

WEAR CHEMICAL RESISTANT GLOVES THAT AFFORD PROPER PROTECTION TO THE HANDS, SUCH AS NEOPRENE, RUBBER, LATEX, ETC.

EYE PROTECTION:

CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER).

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

NORMAL WORK CLOTHING COVERING ARMS AND LEGS.

SECTION IX- SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES, (VAPORS, LIQUID AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATA SHEET MUST BE OBSERVED.

OVEREXPOSURE TO STYRENE HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS: LIVER ABNORMALITIES, KIDNEY DAMAGE AND LUNG DAMAGE.

THIS PRODUCT CONTAINS TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 AND OF 40 CFR 372. PLEASE REFER TO SECTION II – HAZARDOUS COMPONENTS FOR THE SPECIFIC PRODUCT AND CONCENTRATION.

SECTION X – SUPPLEMENT

STYRENE HAS BEEN IDENTIFIED AS A POSSIBLE HUMAN CARCINOGEN BY THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC). THE IARC DETERMINATION IS BASED ON “LIMITED EVIDENCE” IN ANIMALS AND OTHER “RELEVANT DATA”. IARC CONCEDES THERE IS “INADEQUATE EVIDENCE” ON HUMAN BEINGS.

THE SIGNIFICANCE OF THESE RESULTS FOR HUMANS HAS NOT BEEN ESTABLISHED. SYTYRENE IS NOT EXPECTED TO CAUSE CANCER IN HUMANS AT CONCENTRATIONS BELOW THE RECOMMENDED EXPOSURE STANDARD OR WHEN APPROPRIATE INDUSTRIAL HYGIENE PROCEDURES ARE FOLLOWED. MOREOVER, STUDIES IN HUMANS EXPOSED FOR LONG PERIODS OF TIME TO STYRENE HAVE NOT DEMONSTRATED ANY CARCINOGENIC EFFECTS.

AT THE CONCLUSION OF A MAJOR NOTICE AND COMMENT RULEMAKING REVISING ITS AIR CONTAMINANTS REGULATIONS, OSHA CONCLUDED THAT THE “CURRENT EVIDENCE ON STYRENE’S CARCINOGENICITY DOES NOT SUPPORT ITS CLASSIFICATION IN THE FINAL RULE AS A CARCINOGEN”. IN THE SAME RULEMAKING, THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH) COMMENTED THAT THERE “SEEMS TO BE LITTLE BASIS FROM EXPERIMENTAL ANIMAL INVESTIGATIONS OR EPIDEMIOLOGIC STUDIES TO CONCLUDE AT THIS TIME THAT STYRENE IS CARCINOGENIC”. THE NATIONAL TOXICOLOGY PROGRAM DOES NOT INCLUDE STYRENE ON ITS LIST OF CHEMICALS EXPECTED TO BE CARCINOGENIC.

SECTION XI - DISCLAIMER

DISCLAIMER

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE ACCURATE. HOWEVER, I.P.C. MAKES NO WARRANTY EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS OBTAINED FROM THE USE THEREOF. I.P.C. ASSUMES NO RESPONSIBILITIES FOR INJURY FROM THE USE OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET

24-Hour Emergency Telephone (800) 424-9300

Revision Date: 02/03/05
 Issue Date: 03/29/96
 MSDS File ID: MSDSLET0
 Customer No: 3924016175
 Whse No: 0002

This MSDS complies with 29 CFR 1910.1200 (The Hazard Communication Standard)

SECTION I – Product Identification

Product Name: Anchor Bond Vinylester VINYL ESTER RESIN
 UN/NA Number: UN1866 HMIS Rating (H=3, F=3, R=1)
 General or Generic ID: Unsaturated Polyester Resin
 Hazard Classification: Flammable Liquid

SECTION II – Hazardous Components

Ingredient	CAS No.	Percent	OSHA-PEL	ACGIH-TLV	NOTE
Unsaturated Polyester Base Resin	See Index	67.0	None Est.	None-Est.	
Styrene	100-42-5	33.0	50 ppm TWA	50 ppm	(1)

(1) OSHA ceiling value is 100 ppm and ACGIH short term exposure limit (STEL) is 100 ppm. NIOSH recommends a limit of 50 ppm, 8-hour TWA; 100 ppm 15 minute ceiling.

SECTION III – Physical Data

Property		Measurement
Initial Boiling Point	For Styrene	293.40°F @ 760.00 mmHg
Vapor Pressure	For Styrene	4.3 mmHg (20.00°C)
Vapor Density	Air =1	3.6
Specific Gravity		1.01 – 1.30 @ 77.00°F (25.00°C)
Percent Non-volatiles		67.0%
Evaporation Rate		Slower than Ether

SECTION IV – Fire and Explosion Data

Flash Point 88° F for Volatile Component

Flammable (Lowest Value of Styrene) Lower – 1.1%
 (Upper Value of Styrene) Upper – 6.1%

Extinguishing Media: Regular foam or carbon dioxide or dry chemical.

Hazardous Decomposition Products: May form toxic materials; carbon dioxide and carbon monoxide, various hydrocarbons.

Special Firefighting Procedures: Water or foam may cause frothing which can be violent and possibly endanger the life of the firefighter, especially if sprayed into containers of hot, burning liquid.

Wear self-contained breathing apparatus with a full face-piece operated in pressure demand or other positive pressure mode when fighting fires.

Unusual Fire & Explosion Hazards: Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge, or other ignition sources at locations distant from material handling point.

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

 SECTION V – HEALTH DATA

Permissible Exposure Level: Not established for product. See Section II.

Effects of Overexposure: For Styrene

Eyes: Can cause severe irritation, redness, tearing, blurred vision.
 Skin: Prolonged or repeated contact can cause moderate irritation, defatting, dermatitis.
 Breathing: Excessive inhalation of vapors can cause nasal irritation, dizziness, weakness, fatigue, nausea, headache, possible unconsciousness, and even asphyxiation.
 Swallowing: Can cause gastrointestinal irritation, nausea, vomiting, diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis.

First Aid:

If on skin: Thoroughly wash exposed area with soap and water. Remove contaminated clothing. Launder contaminated clothing before re-use.
 If in eyes: Flush with large amount of water, lifting upper and lower lids occasionally. Get medical attention.
 If Swallowed: Do not induce vomiting. Keep person warm, quiet and get medical attention. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis.
 If Breathed: If affected, remove individual to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm, quiet, and get medical attention.

 SECTION VI – Reactivity Data

Hazardous Polymerization: Can Occur.
 Stability: Stable.
 Incompatibility: Avoid contact with: strong alkalis, strong mineral acids and oxidizing agents.
 Conditions to Avoid: Exposure to excessive heat or open flame; storage in open containers; prolonged storage (6 months), storage above 38° C (100°F). Contamination with oxidizing agents.
 Hazardous Decomposition Products: Carbon Monoxide, Carbon Dioxide, Low Molecular Weight Hydrocarbons, Organic Acids.

 SECTION VII – Spill or Leak Procedures

Steps to be Taken in Case Material is Released or Spilled:

Small Spill: Absorb liquid on paper, vermiculite, floor absorbent, or other absorbent material and transfer to hood.
 Large Spill: Eliminate all ignition sources (flares, flames, including pilot lights, electric sparks). Persons not wearing protective equipment should be excluded from area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent or other absorbent material and shoveled into containers.

Waste Disposal Method:

- Small Spill: Allow volatile portion to evaporate in hood. Allow sufficient time for vapors to completely clear hood duct work. Dispose of remaining material in accordance with applicable regulations.
- Large Spill: Destroy by liquid incineration in accordance with applicable regulations. Contaminated absorbent should be disposed of in accordance with local, state and federal regulations.

 SECTION VIII – Protective Equipment to be Used

- Respiratory Protection: If TLV of the product or any component is exceeded, a NIOSH/MSHA jointly approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators under specified conditions. (See your safety equipment supplier). Engineering or administrative controls should be implemented to reduce exposure.
- Ventilation: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV (s).
- Protective Gloves: Wear resistant gloves such as: neoprene, nitrile rubber.
- Eye Protection: Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses (consult your safety equipment supplier).
- Other Protective Equipment: Normal work clothing covering arms and legs.

 SECTION IX – Special Precautions or Other Comments

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapors, liquid, and/or solid), all hazard precautions given in this data sheet must be observed.

Overexposure to styrene has apparently been found to cause the following effects in laboratory animals: liver abnormalities, kidney damage, and lung damage.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with Interplastic or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

 SECTION X – Supplement

Styrene has been identified as a possible human carcinogen by the International Agency for Research on Cancer (IARC). The IARC determination is based on “limited evidence” in animals and other “relevant data”. IARC concedes there is “inadequate evidence” on humans for its findings.

The significance of these results for humans has not been established. Styrene is not expected to cause cancer in humans at concentrations below the recommended exposure standard or when appropriate industrial hygiene procedures are followed. Moreover, studies in humans exposed for long periods of time to styrene have not demonstrated any carcinogenic effects.

At the conclusion of a major notice and comment rulemaking revising its air contaminants regulations, OSHA concluded that the “current evidence on styrene’s carcinogenicity does not support its classification in the final rule as a carcinogen”. In the same rulemaking, the National Institute for Occupational Safety and Health (NIOSH) commented that there “seems to be little basis from experimental animal investigations or epidemiologic studies to conclude at this time that styrene is carcinogenic”. The National Toxicology Program does not include styrene on its list of chemicals expected to be carcinogenic.

 SECTION XI – Supplier Notification

This product contains toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372. Please refer to Section II – Hazardous Components for the specific product and concentration.

Base Resin CAS Index

The base resins indicated under Section II are identified by one or more of the following CAS numbers:

9065-68-3	30946-90-8	64386-66-9
25037-66-5	31260-98-7	64386-67-0
25464-21-5	32505-78-5	57863-48-6
25749-49-9	32762-75-7	67599-39-7
25987-82-0	36346-15-3	67939-08-6
26098-37-3	36425-15-7	68002-44-8
26123-45-5	36425-16-8	68140-84-1
26265-08-7	37347-86-7	68140-88-5
26301-26-8	37999-57-8	68171-28-8
26795-76-6	52453-94-8	68238-98-2
28472-89-1	56083-99-9	68511-26-2
113060-15-4	57863-48-6	72259-64-4
29350-58-1	61224-63-3	81192-92-9
28516-30-5	58182-50-6	135108-89-3
31472-46-5	68585-94-4	25101-03-5
25215-72-9	25749-46-6	26588-55-6
27342-37-6	27837-75-8	28516-30-5
28572-30-7	28679-80-3	29350-58-1
29403-69-8	30110-00-0	31472-46-5
37339-47-2	42133-45-9	54228-09-0
56083-98-8	58182-50-6	67380-21-6
67712-08-7	67845-68-5	67939-40-6
68299-40-1	68585-94-4	68647-07-4
62569-28-2	29011-83-4	155122-62-6
149717-53-3	141224-31-9	