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AROPOL S 2293-15

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THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: AROPOL S 2293-15

FIBERCHEM INCORPORATED  
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KENT WA 98031

03 56 041 3342710-016

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PRODUCT: 568863  
INVOICE: 055303  
INVOICE DATE: 12/27/94  
TO: LIVINGSTON BOATS  
C/O FIBERCHEM INCORPORATED  
1120 ANDOVER PARK EAST  
SEATTLE WA 98188

ATTN: PLANT MGR./SAFETY DIR.

**SECTION I - PRODUCT IDENTIFICATION**

P-16A  
LAMINATING  
RESIN

General or Generic ID: UNSATURATED POLYESTER RESIN

DOT Hazard Classification: 3 (FLAMMABLE LIQUID)

**SECTION II - COMPONENTS**

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION. SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	Percent	PEL	TLV	Note
POLYESTER RESIN *	53-57			( 1 )
STYRENE CAS #: 100-42-5	43	50 PPM	50 PPM	( 2 )

**Notes:**

- ( 1 ) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
- ( 2 ) ACGIH /OSHA SHORT TERM EXPOSURE LIMIT (STEL) FOR STYRENE MONOMER IS 100 PPM. NIOSH RECOMMENDS A LIMIT OF 50 PPM, 8-HOUR TWA, 100 PPM 15 MINUTE CEILING.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

- \* THE SPECIFIC CHEMICAL NAME OF THIS COMPONENT IS BEING WITHHELD AS A TRADE SECRET.

**SECTION III - PHYSICAL DATA**

Boiling Point	for COMPONENT( 43%)	293.40 Deg F 145.22 Deg C 760.00 mm Hg
Vapor Pressure	for COMPONENT( 43%)	4.50 mm Hg 68.00 Deg F 20.00 Deg C
Specific Vapor Density	AIR = 1	3.60
Specific Gravity		1.058 - 1.082 77.00 Deg F 25.00 Deg C
Percent Volatiles		40-45%
Evaporation Rate		SLOWER THAN ETHER
Appearance		CLEAR AMBER COLOURED LIQUID
State		LIQUID
Form		100% SOLN

**SECTION IV - FIRE AND EXPLOSION INFORMATION**

FLASH POINT 73.0 - 100.0 Deg F ( 22.8 - 37.8 Deg C)

EXPLOSIVE LIMIT (LOWEST VALUE OF COMPONENT) LOWER - 1.1% UPPER - 6.1%

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS: CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL 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.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

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**SECTION IV - FIRE AND EXPLOSION INFORMATION (Continued)**

POLYMERIZATION WILL TAKE PLACE UNDER FIRE CONDITIONS. IF POLYMERIZATION OCCURS IN A CLOSED CONTAINER, THERE IS A POSSIBILITY IT WILL RUPTURE VIOLENTLY. COOL STORAGE CONTAINER WITH WATER, IF EXPOSED TO FIRE.

NFPA CODES: HEALTH- 2 FLAMMABILITY- 3 REACTIVITY- 2

**SECTION V - HEALTH HAZARD DATA**

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT. SEE SECTION 11.

## EFFECTS OF ACUTE OVEREXPOSURE:

EYES - EXPOSURE CAUSES EYE IRRITATION. SYMPTOMS MAY INCLUDE STINGING, TEARING, REDNESS, AND SWELLING.  
SKIN - EXPOSURE CAUSES SKIN IRRITATION. PROLONGED OR REPEATED EXPOSURE MAY DRY THE SKIN. SYMPTOMS MAY INCLUDE REDNESS, BURNING, DRYING AND CRACKING, SKIN BURNS AND SKIN DAMAGE. PRE-EXISTING SKIN DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL.

SKIN ABSORPTION IS POSSIBLE, BUT HARMFUL EFFECTS ARE NOT EXPECTED FROM THIS ROUTE OF EXPOSURE UNDER NORMAL CONDITIONS OF HANDLING AND USE.

BREATHING - EXPOSURE TO VAPOR OR MIST IS POSSIBLE.

SHORT-TERM INHALATION TOXICITY IS LOW. BREATHING SMALL AMOUNTS DURING NORMAL HANDLING IS NOT LIKELY TO CAUSE HARMFUL EFFECTS; BREATHING LARGE AMOUNTS MAY BE HARMFUL.

SYMPTOMS ARE MORE TYPICALLY SEEN AT AIR CONCENTRATIONS EXCEEDING THE RECOMMENDED EXPOSURE LIMITS. SYMPTOMS OF EXPOSURE MAY INCLUDE:

-IRRITATION (NOSE, THROAT, RESPIRATORY TRACT)- PRE-EXISTING LUNG DISORDERS, E.G. ASTHMA-LIKE CONDITIONS, MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL.

-METALLIC TASTE-

-IMPAIRED COORDINATION-

-CONFUSION-

-CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION (DIZZINESS, DROWSINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, UNCONSCIOUSNESS) AND OTHER CNS EFFECTS-

SWALLOWING - SINGLE DOSE ORAL TOXICITY IS LOW. SWALLOWING SMALL AMOUNTS DURING NORMAL HANDLING IS NOT LIKELY TO CAUSE HARMFUL EFFECTS; SWALLOWING LARGE AMOUNTS MAY BE HARMFUL.

SYMPTOMS MAY INCLUDE:

-GASTROINTESTINAL IRRITATION (NAUSEA, VOMITING, DIARRHEA)-

-LIVER DAMAGE-

THIS MATERIAL CAN ENTER THE LUNGS DURING SWALLOWING OR VOMITING AND CAUSE LUNG INFLAMMATION AND/OR DAMAGE.

## FIRST AID:

IF ON SKIN: REMOVE CONTAMINATED CLOTHING. FLUSH EXPOSED AREA WITH LARGE AMOUNTS OF WATER. IF SKIN IS DAMAGED, SEEK IMMEDIATE MEDICAL ATTENTION. IF SKIN IS NOT DAMAGED AND SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION. LAUNDRY CLOTHING BEFORE REUSE.

IF IN EYES: IF SYMPTOMS DEVELOP, MOVE INDIVIDUAL AWAY FROM EXPOSURE AND INTO FRESH AIR. FLUSH EYES GENTLY WITH WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS APART. IF SYMPTOMS PERSIST OR THERE IS ANY VISUAL DIFFICULTY, SEEK MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING. THIS MATERIAL IS AN ASPIRATION HAZARD. IF INDIVIDUAL IS DROWSY OR UNCONSCIOUS, PLACE ON LEFT SIDE WITH THE HEAD DOWN. SEEK MEDICAL ATTENTION. IF POSSIBLE, DO NOT LEAVE INDIVIDUAL UNATTENDED.

IF BREATHED: IF SYMPTOMS DEVELOP, IMMEDIATELY MOVE INDIVIDUAL AWAY FROM EXPOSURE AND INTO FRESH AIR. SEEK IMMEDIATE MEDICAL ATTENTION; KEEP PERSON WARM AND QUIET. IF PERSON IS NOT BREATHING, BEGIN ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN.

## PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN CONTACT, SKIN ABSORPTION, EYE CONTACT

## EFFECTS OF CHRONIC OVEREXPOSURE:

THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS CLASSIFIED STYRENE IN GROUP 2B (POSSIBLY CARCINOGENIC TO HUMANS). THIS CLASSIFICATION IS NOT BASED ON ANY SIGNIFICANT NEW EVIDENCE THAT STYRENE MAY BE CARCINOGENIC, BUT RATHER ON A REVISED DEFINITION FOR GROUP 2B AND CONSIDERATION OF NEW DATA ON STYRENE OXIDE. A NUMBER OF LIFETIME ANIMAL STUDIES WITH STYRENE INCLUDING THOSE CONDUCTED IN THE NATIONAL CANCER INSTITUTE (NCI) BIOASSAY PROGRAM HAVE NOT SHOWN STYRENE TO BE CARCINOGENIC.

THIS MATERIAL (OR A COMPONENT) HAS BEEN SHOWN TO CAUSE HARM TO THE FETUS IN LABORATORY ANIMAL STUDIES. HARM TO THE FETUS OCCURS ONLY AT EXPOSURE LEVELS THAT HARM THE PREGNANT ANIMAL. THE RELEVANCE OF THESE FINDINGS TO HUMANS IS UNCERTAIN.

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN LABORATORY ANIMALS, AND MAY AGGRAVATE PRE-EXISTING DISORDERS OF THESE ORGANS IN HUMANS: TESTIS DAMAGE, LIVER DAMAGE, EFFECTS ON HEARING, MILD, REVERSIBLE KIDNEY EFFECTS, RESPIRATORY TRACT DAMAGE

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS, AND MAY AGGRAVATE PRE-EXISTING DISORDERS OF THESE ORGANS: CENTRAL NERVOUS SYSTEM EFFECTS, EFFECTS ON HEARING, RESPIRATORY TRACT DAMAGE

**SECTION VI - REACTIVITY DATA**

HAZARDOUS POLYMERIZATION: CAN OCCUR -- AVOID EXPOSURE TO EXCESSIVE HEAT, PEROXIDES AND POLYMERIZATION CATALYSTS.

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG ALKALIES, STRONG MINERAL ACIDS.

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**SECTION VII - SPILL OR LEAK PROCEDURES**

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

**SMALL SPILL:** ABSORB LIQUID ON VERMICULITE, FLOOR ABSORBENT, OR OTHER ADSORBENT 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. PREVENT FROM ENTERING DRAINS, SEWERS, STREAMS OR OTHER BODIES OF WATER. PREVENT FROM SPREADING. IF RUNOFF OCCURS, NOTIFY AUTHORITIES AS REQUIRED. PUMP OR VACUUM TRANSFER SPILLED PRODUCT TO CLEAN CONTAINERS FOR RECOVERY. ABSORB UNRECOVERABLE PRODUCT. TRANSFER CONTAMINATED ABSORBENT, SOIL AND OTHER MATERIALS TO CONTAINERS FOR DISPOSAL.

**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 MAY BE DEPOSITED IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

**SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED**

**RESPIRATORY PROTECTION:** IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION 11), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR INDUSTRIAL HYGIENIST). 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: POLYVINYL ALCOHOL

**EYE PROTECTION:** CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. CONSULT YOUR SAFETY REPRESENTATIVE.

**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 (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

EXPOSURE TO AEROSOLS AND MISTS WHEN MATERIAL IS SPRAYED MAY PRESENT A GREATER RISK OF INJURY FROM COMPONENTS BECAUSE HIGHER CONCENTRATIONS ARE IN THE ATMOSPHERE THAN RESULT FROM VAPOR ALONE. PROVIDE ADEQUATE VENTILATION AND IF NECESSARY, USE RESPIRATORY PROTECTION.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.



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**DEFINITIONS**

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This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

**SECTION I  
PRODUCT IDENTIFICATION**

**GENERAL OR GENERIC ID:** Chemical family or product description.

**DOT HAZARD CLASSIFICATION:** Product meets DOT criteria for hazards listed.

**SECTION II  
COMPONENTS**

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC, or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELS) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

**SECTION III  
PHYSICAL DATA**

**BOILING POINT:** Of product if known. The lowest value of the components is listed for mixtures.

**VAPOR PRESSURE:** Of product if known. The highest value of the components is listed for mixtures.

**SPECIFIC VAPOR DENSITY:** Compared to AIR = 1. If the Specific Vapor Density of a product is not known, the value is expressed as lighter or greater than air.

**SPECIFIC GRAVITY:** Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

**PERCENT VOLATILES:** Percentage of material with initial boiling point below 425 degrees Fahrenheit and vapor pressure above 0.1mm Hg at 68 F.

**EVAPORATION RATE:** Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

**SECTION IV  
FIRE AND EXPLOSION DATA**

**FLASH POINT:** Method identified.

**EXPLOSION LIMITS:** For product if known. The lowest value of the components is listed for mixtures.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Known or expected hazardous products resulting from heating, burning or other reactions.

**SECTION IV (cont.)**

**EXTINGUISHING MEDIA:** Following National Fire Protection Association criteria.

**FIREFIGHTING PROCEDURES:** Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

**SPECIAL FIRE AND EXPLOSION HAZARDS:** States hazards not covered by other sections.

**NFPA CODES:** Hazard ratings assigned by the National Fire Protection Association.

**SECTION V  
HEALTH HAZARD DATA**

**PERMISSIBLE EXPOSURE LIMIT:** For product.

**THRESHOLD LIMIT VALUE:** For product.

**EFFECTS OF ACUTE OVEREXPOSURE:** Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

**EFFECTS OF CHRONIC OVEREXPOSURE:** Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

**FIRST AID:** Procedures to be followed when dealing with accidental overexposure.

**PRIMARY ROUTE OF ENTRY:** Based on properties and expected use.

**SECTION VI  
REACTIVITY DATA**

**HAZARDOUS POLYMERIZATION:** Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

**STABILITY:** Conditions to avoid to prevent hazardous or violent decomposition.

**INCOMPATIBILITY:** Materials and conditions to avoid to prevent hazardous reactions.

**SECTION VII  
SPILL OR LEAK PROCEDURES**

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

**SECTION VIII  
PROTECTIVE EQUIPMENT TO BE USED**

Protective equipment which may be needed when handling the product.

**SECTION IX  
SPECIAL PRECAUTIONS OR OTHER COMMENTS**

Covers any relevant points not previously mentioned.

**ADDITIONAL COMMENTS**

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.