1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name	:	STY-ALLYL ALCOHOL COPOLYMER 100
CAS Number:	:	25119-62-4
Chemical characterization	:	Organic copolymers
Chemical name	:	Styrene Allyl Alcohol Copolymer
Synonyms	:	SAA-100
Identified uses	:	Resins

Company Address
Lyondell Chemical Company
LyondellBasell Tower, Suite 300
1221 McKinney St.
P.O. Box 2583
Houston Texas 77252-2583

Company Telephone
Customer Service 888 777-0232
product.safety@lyb.com

Emergency telephone number
CHEMTREC USA 800-424-9300
LYONDELL 800-245-4532

E-mail address : product.safety@lyb.com
Responsible/issuing person

2. HAZARDS IDENTIFICATION

GHS Classification

Combustible dust

Label elements

Signal word : Warning

Hazard Statements : May form combustible dust concentrations in air.

Other hazards

No additional information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Components

Chemical name	CAS-No. EC-No.	Weight %	Component Type
2-Propen-1-ol, polymer with ethenylbenzene	25119-62-4	> 99.5 %	

Contains: Stabilizers

4. FIRST AID MEASURES

General advice : Consult a physician/doctor if necessary.
Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid.
Show this material safety data sheet to the doctor in attendance.

If inhaled : Remove person to fresh air. If signs/symptoms continue, get medical attention.
In case of excessive inhalation of fumes that may be generated during heating of this material, move the person to fresh air.
Obtain medical attention.
Keep person warm, if necessary give Cardio-Pulmonary Resuscitation (CPR)

In case of skin contact : If molten material contacts the skin, immediately flush with large amounts of water to cool the affected tissue and polymer.
Do not attempt to peel polymer from skin as this will remove the skin.
Obtain immediate emergency medical attention if burn is deep or extensive.

In case of eye contact : Flush eyes thoroughly with water for several minutes and seek medical attention if discomfort persists.
In case of eye contact with molten polymer:
Continuously flush eye(s) with cool running water for at least 15 minutes.
Beyond flushing, DO NOT attempt to remove the material adherent to the eye(s).
Immediately seek medical attention.

If swallowed : Adverse health effects due to ingestion are not anticipated.

Notes to physician

Symptoms	:	Inhalation of process fumes and vapors may cause soreness in the nose and throat and coughing.
Hazards	:	Dust contact with the eyes can lead to mechanical irritation. Molten polymer may cause thermal burns.
Treatment	:	Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	SMALL FIRE: Use dry chemical, CO2, or water spray.
	:	LARGE FIRES: Use water spray hose nozzles from a safe location.
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Keep away from heat and sources of ignition. Dust particles from this product are combustible particulate solids that present a flash fire or explosion hazard when suspended in air. In case of fire hazardous decomposition products may be produced such as: May decompose to Carbon Monoxide, Carbon Dioxide, Styrene, Allyl Alcohol and other toxic vapors. The formation of hydrocarbons and aldehydes are possible in the initial stages of a fire (especially in between 400 C and 700 C)
Special protective equipment for fire-fighters	:	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighter's protective clothing will only provide limited protection.
Further information	:	Combustible particulate solid, will decompose under fire conditions. Calorific Value: 8000 - 11000 kcal/kg Fight fire from safe distance with hose lines or monitor nozzles. Heat from fire may melt, decompose polymer, and generate flammable vapors. Move containers from fire area if it can be done without risk. Evacuate immediately in the event of opening of storage container pressure relief devices or discoloration of container. Always stay away from tanks engulfed in fire. Do not attempt to get on top of storage containers involved in

fire.
Cool storage containers with large volumes of water even after fire is out.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Equip responders with proper protection. Creates dangerous slipping hazard on any hard smooth surface. Equip emergency responders with proper personal protective equipment (PPE) Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Potential combustible dust hazard. Polymer particles create slipping hazard on hard smooth surfaces.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
Methods for containment / Methods for cleaning up	:	On land, sweep/shovel into suitable disposal containers or vacuum using equipment which avoids ignition risk. On water, material is insoluble; collect and contain as any solid. All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible. Avoid generating dust. Potential dust explosion hazard.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	:	Avoid dust accumulation in enclosed space. Use dust collection systems designed per NFPA 654 to avoid dust accumulation. Avoid generating dust; fine dust suspended in air and in the presence of an ignition source is a potential dust explosion hazard. Static discharge (spark), or other ignition sources, in high dust environments may ignite the dust and result in a dust explosion Electrostatic charge may build up during handling. Equipment

should be grounded and bonded.
Equipment handling polymer should be conductive and grounded (earthed) and bonded.
Metal containers involved in the transfer of this material should be grounded and bonded.
All electrical equipment should conform to applicable electric codes and regulatory requirements for areas handling combustible dusts.
After handling, always wash hands thoroughly with soap and water.
When bringing the material to processing temperatures vapors may develop may condense in the exhaust ventilation. See section 10.

Fire-fighting class : Polymer will burn but does not easily ignite.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a dry location.
Use good housekeeping practices during storage, transferring and handling. Process enclosures and adequate ventilation should be used to avoid excessive dust accumulation.
Degradation can occur because of exposure to temperature, light and oxidizing agent: trace amounts of light hydrocarbons, compounds of oxidation, aldehydes and acids can be generated.
Store away from excessive heat and away from strong oxidizing agents.
Keep container closed to prevent contamination.
Take measures to prevent the build up of electrostatic charge.

: Store in dry protected location to prevent moisture contact.
All containers should be labeled to warn against exposure.

Specific end use(s)

: See Section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Ingredients with workplace control parameters

Occupational Exposure Limits

Components	CAS-No.	Type	Limit Value	Basis Revision Date	Additional Information

Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	10 mg/m3 inhalable	US (ACGIH) 2005	
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	3 mg/m3 respirable	US (ACGIH) 2005	
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	15 mg/m3 total dust	US (OSHA) 2005	
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	5 mg/m3 respirable	US (OSHA) 2005	

Consult local authorities for acceptable exposure limits.

Exposure controls

Engineering measures

Follow the recommendations in NFPA 654 (as amended and adopted) for equipment used to handle this product.
Engineering controls, i.e. enclosed systems, should be used whenever feasible to maintain exposures below acceptable criteria. When such controls are not feasible, or sufficient to achieve full conformance, other engineering controls such as local exhaust ventilation should be used.
Equipment and vessels handling combustible dust from this material should be designed to either prevent dust explosions (inerting) or safely vent dust explosions per NFPA 654
Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

Personal protective equipment

Respiratory protection : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Use appropriate respiratory protection where atmosphere exceeds recommended limits.
Where workers could be exposed to dust concentrations above the exposure limit they must use appropriate certified

respirators.

Hand protection	:	Wear gloves that provide thermal protection where there is a potential for contact with heated material.
Eye and face protection	:	Dust service goggles should be worn to prevent mechanical injury or other irritation to eyes due to airborne particles which may result from handling this product.
Skin and body protection	:	Wear suitable protective clothing.
Hygiene measures	:	Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Pellets. Powder
Color	:	White.
Odor	:	Little or no odor.
Odor Threshold	:	No value available.
Flash point	:	> 93.3 °C Method: (PMCC)
Lower explosion limit	:	No Data Available.
Upper explosion limit	:	No Data Available.
Flammability (solid, gas)	:	Combustible solid.
Oxidizing properties	:	No Data Available.
Autoignition temperature	:	~ 440 °C Method: (ASTM D1929).
Molecular weight	:	~ 3,000 g/mol
Decomposition temperature	:	not determined

Melting point/freezing point	:	Not applicable.
Boiling point/boiling range	:	Not applicable.
Vapor pressure	:	Not applicable.
Density	:	~ 1.05 g/cm3 at 20 °C
Water solubility	:	Negligible (Less Than .1 Percent).
Partition coefficient: n-octanol/water	:	No Data Available.
Viscosity, kinematic	:	No Data Available.
Relative vapor density	:	No Data Available.
Explosive properties	:	No Data Available.
Other Information	:	No additional information available.

10. STABILITY AND REACTIVITY

Reactivity	:	Will not occur.
Chemical stability	:	Stable under normal conditions.
Hazardous reactions	:	Not expected to occur. This material is stable when properly handled and stored.
Conditions to avoid	:	Heat, sparks, open flame, other ignition sources, and dusty conditions.
Materials to avoid	:	May react with carboxyl, isocyanates and chlorides.
Hazardous decomposition products	:	May decompose to Carbon Monoxide, Carbon Dioxide, Styrene, Allyl Alcohol and other toxic vapors.
Thermal decomposition	:	Incomplete combustion may form carbon monoxide, carbon dioxide, styrene, allyl alcohol, and other toxic vapors.

11. TOXICOLOGICAL INFORMATION

Product Summary	:	The below given information is based on the assessment of the product including impurities.
Acute toxicity		
Acute oral toxicity	:	Based on acute toxicity values, not classified.

: LD50: > 2,000 mg/kg
Species: Rat

Acute inhalation toxicity : Based on acute toxicity values, not classified.

: LC50: > 5.1 mg/l
Exposure time: 4 HOURS
Species: Rat

Acute dermal toxicity : Based on acute toxicity values, not classified.

: LD50: > 2,000 mg/kg
Species: Rat

Skin corrosion/irritation : Not classified
May cause slight transient skin irritation.

Serious eye damage/eye irritation : Not classified
May produce minimal, fully reversible eye irritation.

Respiratory or skin sensitization : Respiratory sensitization
Not classified
No study available.

: Skin sensitization
Not classified
No adverse effect observed.

Chronic toxicity

Carcinogenicity : Not classified
Not listed by IARC, NTP, OSHA or EPA.

Germ cell mutagenicity : Not classified
No adverse effect observed.

Reproductive toxicity

Effects on fertility / Effects on or via lactation : Not classified
No study available.

Effects on Development	:	Not classified No study available.
Target Organ Systemic Toxicant - Single exposure	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.
Target Organ Systemic Toxicant - Repeated exposure	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration hazard	:	Based on physico-chemical values or lack of human evidence, not classified.

12. Ecological information

Ecotoxicology Assessment

Short-term (acute) aquatic hazard	:	Not classified
Long-term (chronic) aquatic hazard	:	Not classified
Toxicity to fish	:	Acute toxicity to fish is very low.
Toxicity to daphnia and other aquatic invertebrates	:	Acute toxicity to freshwater and marine invertebrates is very low.
Toxicity to algae	:	Acute toxicity to aquatic plants very low.
Toxicity to bacteria	:	Toxicity to microorganisms is low.
Toxicity to fish (Chronic toxicity)	:	Low chronic toxicity to fish.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Low chronic toxicity to aquatic invertebrates.

Persistence and degradability

Biodegradability	:	Not expected to be biodegradable.

Bioaccumulative potential

Bioaccumulation	:	This material is not expected to bioaccumulate.

Mobility in soil

Mobility : no data available

Other adverse effects

Environmental fate and pathways : This material is not volatile and insoluble in water.

Other information

Additional ecological information : Ecotoxicity is expected to be minimal based on the low water solubility of polymers.

13. Disposal considerations

Waste treatment methods

Product : Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes.
Comply with federal, state, or local regulations for disposal.

14. TRANSPORT INFORMATION

Not regulated for transport

15. REGULATORY INFORMATION

TSCA 12b

No substances are subject to TSCA 12(b) export notification requirements.

Significant New Use Rules (SNUR)

No substances are subject to a Significant New Use Rule.

SARA 302/304

This product contains no known chemicals regulated under SARA 302/304.

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

Combustible dust

SARA 313

This product contains no known chemicals regulated under SARA 313.

State Reporting

This material contains the following chemical substance at very low levels which is regulated under California Proposition 65. However, it is the responsibility of the California business owner to develop his or her own regulatory compliance plan. Contact Product Safety for further information at product.safety@lyb.com.

Substance	CASRN	Type of Toxicity			
		Carcinogen	Developmental	Repro-Male	Repro-Female
Styrene	100-42-5	X			

This product contains no known chemicals regulated by New Jersey's Worker and Community Right to Know Act.

This product contains the following chemicals regulated by Massachusetts' Right to Know Law:

107-18-6	Allyl Alcohol
100-42-5	Styrene

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

107-18-6	Allyl Alcohol
100-42-5	Styrene

Other international regulations

Global Inventory Status

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant

Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

REACh status
If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that the chemical substance in this product has been registered under REACh, in accordance with the deadlines set forth in REACh. (Regulation (EU) No. 1907/2006)

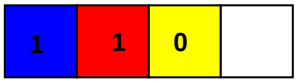
Contact product.safety@lyb.com for additional global inventory information.

16. OTHER INFORMATION

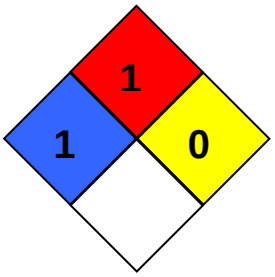
Material safety datasheet sections which have been updated:

Revised Section(s): 15 16

HMIS Classification : Health Hazard: 1
Flammability: 1
Physical hazards: 0



NFPA Classification : Health Hazard: 1
Fire Hazard: 1
Instability: 0



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The Trade Name referenced in section 1 is a trademark owned or used by the LyondellBasell family of companies.

Numerical Data Presentation

The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

Language Translations

The information presented in this document has been translated from English by a vendor LyondellBasell believes to be reliable. LyondellBasell and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for the original document written in English.

End of Material Safety Data Sheet