

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Affinity Resins in Ethyl Alcohol Solution (Aqueous)

1.2. Intended Use of the Product

Laboratory chemicals

1.3. Name, Address, and Telephone of the Responsible Party

Company

Repligen Corporation

41 Seyon Street, Building 1, Suite 100

Waltham, MA 02453

USA

+1 781-250-0111

customerserviceUS@repligen.com

1.4. Emergency Telephone Number

Emergency Number : VelocityEHS

(800)255-3924 (North America)

+1 (813)248-0585 (International)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US/CA Classification

Flammable liquids Category 3

H226

Serious eye damage/eye irritation Category 2B

H320

2.2. Label Elements

GHS-US/CA Labeling

Hazard Pictograms (GHS-US/CA) :



GHS02

Signal Word (GHS-US/CA) :

Warning

Hazard Statements (GHS-US/CA) :

H226 - Flammable liquid and vapor.

H320 - Causes eye irritation.

Precautionary Statements (GHS-US/CA) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 - Keep container tightly closed.

P241 - Use explosion-proof electrical, ventilating, and lighting equipment.

P242 - Use only non-sparking tools.

P243 - Take action to prevent static discharges.

P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.

P280 - Wear protective gloves, protective clothing, and eye protection.

P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 - If eye irritation persists: Get medical advice/attention.

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P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.

P403+P235 - Store in a well-ventilated place. Keep cool.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Agarose	Sepharose / AGAROSE / PEG-60 GLYCERYL STEARATE	(CAS-No.) 9012-36-6	≈ 50	Comb. Dust
Water	water / AQUA	(CAS-No.) 7732-18-5	31 – 32	Not classified
Ethyl alcohol	Methylcarbinol / Ethanol / ALCOHOL / Grain alcohol / Alcohol / Alcohol anhydrous	(CAS-No.) 64-17-5	17.8 – 18.9	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 (≥ 50%)

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%). Full text of H-statements: see section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Immediately drench affected area with water for at least 15 minutes. Immediately remove contaminated clothing. Obtain medical attention if irritation develops or persists. If product is biologically contaminated, seek medical advice and follow all insitutional protocols concerning bodily contact with biological specimens.

Eye Contact: Immediately rinse with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists. If product is biologically contaminated, seek medical advice and follow all insitutional protocols concerning bodily contact with biological specimens.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Causes eye irritation.

Inhalation: Prolonged exposure may cause irritation.

Skin Contact: Prolonged exposure may cause skin irritation.

Eye Contact: May cause eye irritation.

Ingestion: Ingestion may cause adverse effects. May cause headache, dizziness, drowsiness, and loss of coordination.

Chronic Symptoms: Repeated exposure may cause skin dryness or cracking.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂). Water may be ineffective but water should be used to keep fire-exposed container cool.

Unsuitable Extinguishing Media: Do not use a heavy water stream. A heavy water stream may spread burning liquid.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Flammable liquid and vapor. Alcohols burn with a pale blue flame that is difficult to see under normal lighting conditions.

Explosion Hazard: May form flammable or explosive vapor-air mixture. Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors.

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Reactivity: Reacts violently with strong oxidizers. Increased risk of fire or explosion.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO₂).

Other Information: No additional information available.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: If product is biologically contaminated, follow all institutional protocols concerning the potential release of pathogens. Avoid breathing (vapor, mist, spray). Do not get in eyes, on skin, or on clothing. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Use special care to avoid static electric charges.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Eliminate ignition sources first, then ventilate the area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material. Do not take up in combustible material such as: saw dust or cellulosic material. Use only non-sparking tools. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable. Material may be biologically contaminated with pathogenic organisms during use.

Precautions for Safe Handling: Avoid contact with skin, eyes and clothing. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid breathing vapors, mist, spray. Take precautionary measures against static discharge. Use only non-sparking tools.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Take action to prevent static discharges. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment.

Storage Conditions: Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Keep in fireproof place.

Incompatible Materials: Oxidizers. Acids. Halogens. Alkali metals.

7.3. Specific End Use(s)

Laboratory chemicals

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

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For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Ethyl alcohol (64-17-5)		
USA ACGIH	ACGIH OEL STEL [ppm]	1000 ppm
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
USA OSHA	OSHA PEL (TWA) [1]	1900 mg/m ³
USA OSHA	OSHA PEL (TWA) [2]	1000 ppm
USA NIOSH	NIOSH REL (TWA)	1900 mg/m ³
USA NIOSH	NIOSH REL TWA [ppm]	1000 ppm
USA IDLH	IDLH [ppm]	3300 ppm (10% LEL)
Alberta	OEL TWA	1880 mg/m ³
Alberta	OEL TWA [ppm]	1000 ppm
British Columbia	OEL STEL [ppm]	1000 ppm
Manitoba	OEL STEL [ppm]	1000 ppm
New Brunswick	OEL TWA	1880 mg/m ³
New Brunswick	OEL TWA [ppm]	1000 ppm
Newfoundland & Labrador	OEL STEL [ppm]	1000 ppm
Nova Scotia	OEL STEL [ppm]	1000 ppm
Nunavut	OEL STEL [ppm]	1250 ppm
Nunavut	OEL TWA [ppm]	1000 ppm
Northwest Territories	OEL STEL [ppm]	1250 ppm
Northwest Territories	OEL TWA [ppm]	1000 ppm
Ontario	OEL STEL [ppm]	1000 ppm
Prince Edward Island	OEL STEL [ppm]	1000 ppm
Québec	VECD (OEL STEL) [ppm]	1000 ppm
Saskatchewan	OEL STEL [ppm]	1250 ppm
Saskatchewan	OEL TWA [ppm]	1000 ppm
Yukon	OEL STEL	1900 mg/m ³
Yukon	OEL STEL [ppm]	1000 ppm
Yukon	OEL TWA	1900 mg/m ³
Yukon	OEL TWA [ppm]	1000 ppm

8.2. Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases or vapors may be released. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: No data available
Odor	: Alcohol-like
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: > 35 °C (95 °F)
Flash Point	: > 23 °C (73.4 °F)
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: No data available
Upper Flammable Limit	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20°C	: No data available
Relative Density	: No data available
Specific Gravity	: No data available
Solubility	: Water: Partially miscible
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Reacts violently with strong oxidizers. Increased risk of fire or explosion.

10.2. Chemical Stability:

Flammable liquid and vapor. May form flammable or explosive vapor-air mixture.

10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

10.4. Conditions to Avoid:

Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources.

10.5. Incompatible Materials:

Oxidizers. Acids. Halogens. Alkali metals.

10.6. Hazardous Decomposition Products:

Thermal decomposition may produce: Carbon oxides (CO, CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Likely routes of exposure: Inhalation. Dermal. Oral. Eye contact.

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data:

No additional information available

Skin Corrosion/Irritation: Not classified

Eye Damage/Irritation: Causes eye irritation.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

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Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause eye irritation.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects. May cause headache, dizziness, drowsiness, and loss of coordination.

Chronic Symptoms: Repeated exposure may cause skin dryness or cracking.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Ethyl alcohol (64-17-5)	
LD50 Oral Rat	10470 mg/kg
LD50 Dermal Rat	20 ml/kg
LC50 Inhalation Rat	133.8 mg/l/4h
LC50 Inhalation Rat	124.7 mg/l/4h
ATE US/CA (dermal)	15,780.00 mg/kg body weight

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

No additional information available

Ethyl alcohol (64-17-5)	
LC50 Fish 1	11200 mg/l
EC50 - Crustacea [1]	9268 – 14221 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
ErC50 algae	1000 mg/l
NOEC Chronic Crustacea	9.6 mg/l

12.2. Persistence and Degradability

Immobilized rProtein Solutions	
Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

Immobilized rProtein Solutions	
Bioaccumulative Potential	Not established.

Ethyl alcohol (64-17-5)	
Partition coefficient n-octanol/water (Log Pow)	-0.35 (at 24 °C (at pH 7.4))

12.4. Mobility in Soil

Immobilized rProtein Solutions	
Ecology - Soil	Leaches if exposed to water.

12.5. Other Adverse Effects

Other Adverse Effects: None known.

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Treatment Methods: Product contaminated with biological materials should preferably be incinerated.

Sewage Disposal Recommendations: Do not dispose of waste into sewer.

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Handle empty containers with care because residual vapors are flammable.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

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14.1. In Accordance with DOT

Ground shipments within the US under 119 US Gal / 450 L are not regulated under 49CFR173.150(e)(1). Bulk shipments are regulated as noted below.

Proper Shipping Name : ETHANOL MIXTURE
Hazard Class : 3
Identification Number : UN1170
Label Codes : 3
Packing Group : III
ERG Number : 127



14.2. In Accordance with IMDG

Not regulated for transport under Special Provision 144

14.3. In Accordance with IATA

Not regulated for transport under Special Provision A58

14.4. In Accordance with TDG

Not regulated for transport – Rule 1.36(b) Exempted

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Immobilized rProtein Solutions	
SARA Section 311/312 Hazard Classes	Physical hazard - Flammable (gases, aerosols, liquids, or solids) Health hazard - Serious eye damage or eye irritation
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Agarose (9012-36-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
Ethyl alcohol (64-17-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	

15.2. US State Regulations

Ethyl alcohol (64-17-5)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List

15.3. Canadian Regulations

Water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)
Agarose (9012-36-6)
Listed on the Canadian DSL (Domestic Substances List)
Ethyl alcohol (64-17-5)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 10/27/2023

Revision

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor

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H319	Causes serious eye irritation
H320	Causes eye irritation

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

NA GHS SDS 2015 (Can, US)