

SECTION 1: Identification

1.1. Identification

Product form : Resin suspension in storage buffer
 Trade name : Actigel ALD Superflow 4
 Product code : 2804SF4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Storage buffer for chromatography media.

1.3. Details of the supplier of the safety data sheet

Sterogene Bioseparations, Inc.
 1949 Kellogg Avenue, Carlsbad, CA 92008
 Telephone Number: (760) 929-0455
 Contact Person: James Danford
 jdanford@sterogene.com

1.4. Emergency telephone number

Emergency number : (951) 447-9994

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 3 H226 - Flammable liquid and vapor
 Eye Irrit. 2A H319 - Causes serious eye irritation
 STOT SE 1 H370 - Causes damage to organs

Full text of H-statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H226 - Flammable liquid and vapor
 H319 - Causes serious eye irritation
 H370 - Causes damage to organs

Precautionary statements (GHS-US) :

- P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
- P233 - Keep container tightly closed
- P240 - Ground/bond container and receiving equipment
- P241 - Use explosion-proof electrical, lighting, ventilating equipment
- P242 - Use only non-sparking tools
- P243 - Take precautionary measures against static discharge
- P260 - Do not breathe vapors, spray, mist
- P264 - Wash hands thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P280 - Wear eye protection, protective gloves
- P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
- P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P307+P311 - If exposed: Call a poison center/doctor
- P337+P313 - If eye irritation persists: get medical advice/attention
- P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry extinguishing powder to extinguish
- P403+P235 - Store in a well-ventilated place. Keep cool
- P405 - Store locked up
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

Actigel ALD Superflow 4

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

2.3. Other hazards

Other hazards which do not result in classification : This material contains methanol, which, when ingested, has caused acidosis, ocular toxicity ranging from diminished visual capacity to complete blindness, and death.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

The only hazards identified with this material are those associated with the storage buffer.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Ethanol	(CAS No) 64-17-5	19	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 Asp. Tox. 1, H304
methanol	(CAS No) 67-56-1	1	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Rinse skin with water/shower. Remove/take off immediately all contaminated clothing.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical advice/attention.
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause headache and dizziness.
Symptoms/injuries after skin contact : May cause skin irritation / dermatitis. May cause skin dryness or cracking.
Symptoms/injuries after eye contact : Eye irritation.
Symptoms/injuries after ingestion : This material contains methanol, which, when ingested, has caused acidosis, ocular toxicity ranging from diminished visual capacity to complete blindness, and death.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Alcohol resistant foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapor. Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases.
Explosion hazard : No direct explosion hazard.
Reactivity : Flammable liquid and vapor. Stable under normal conditions of use.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use fire-extinguishing media appropriate for surrounding materials.
Protective equipment for firefighters : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe vapors, spray, and mist. Avoid contact with skin and eyes.

Actigel ALD Superflow 4

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak, if possible without risk.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: Exposure-controls/personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Do not breathe vapors, spray, and mist. Avoid contact with skin and eyes.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Incompatible materials : Strong acids. Strong oxidizers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethanol (64-17-5)		
ACGIH	ACGIH STEL (ppm)	1000 ppm
ACGIH	Remark (ACGIH)	URT irr
OSHA	OSHA PEL (TWA) (mg/m ³)	1900 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
methanol (67-56-1)		
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	250 ppm
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea
OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Hand protection : Impermeable protective gloves.
Eye protection : Safety glasses.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
Environmental exposure controls : Avoid release to the environment.

Actigel ALD Superflow 4

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Aqueous solution
Color	: Colorless
Odor	: Alcohol Odor
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapor. Stable under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. No polymerization.

10.4. Conditions to avoid

Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong acids. Strong oxidizers.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	: Oral; Inhalation; Skin and eye contact
Acute toxicity	: Not classified

Ethanol (64-17-5)	
LD50 oral rat	7060 mg/kg
LC50 inhalation rat (mg/l)	124.7 mg/l/4h

Actigel ALD Superflow 4

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

methanol (67-56-1)	
LD50 oral rat	6200 mg/kg
LC50 inhalation rat (ppm)	22500 ppm (Exposure time: 8 h)
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Causes damage to organs.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause headache and dizziness.
Symptoms/injuries after skin contact	: May cause skin irritation / dermatitis. May cause skin dryness or cracking.
Symptoms/injuries after eye contact	: Eye irritation.
Symptoms/injuries after ingestion	: This material contains methanol, which, when ingested, has caused acidosis, ocular toxicity ranging from diminished visual capacity to complete blindness, and death.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Ethanol (64-17-5)	
LC50 fish 1	12.0 - 16.0 ml/l (Exposure time: 96 h - Species: <i>Oncorhynchus mykiss</i> [static])
LC50 other aquatic organisms 1	5012 mg/l 48 hours - <i>Daphnia</i>
EC50 <i>Daphnia</i> 1	9268 - 14221 mg/l (Exposure time: 48 h - Species: <i>Daphnia magna</i>)
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: <i>Pimephales promelas</i> [static])
EC50 <i>Daphnia</i> 2	2 mg/l (Exposure time: 48 h - Species: <i>Daphnia magna</i> [Static])
ErC50 (algae)	275 mg/l
ErC50 (other aquatic plants)	4432 mg/l
NOEC (acute)	9.6 mg/l <i>Daphnia magna</i>

methanol (67-56-1)	
LC50 fish 1	28200 mg/l (Exposure time: 96 h - Species: <i>Pimephales promelas</i> [flow-through])
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: <i>Pimephales promelas</i> [static])

12.2. Persistence and degradability

No additional information available

12.3. Mobility in soil

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of in conformance with all applicable federal, state and local laws and regulations.
Additional information : Flammable vapors may accumulate in the container.

Actigel ALD Superflow 4

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 14: Transport information

Department of Transportation (DOT)

Not regulated by DOT : 49CFR 173.150(e)(1,2) states that aqueous solutions of alcohol containing 24 percent or less alcohol by volume and no other hazardous material can be re-classified as a combustible liquid and are not subject to the requirements.

Air transport

Not regulated by IATA - Not regulated for transport by air. : IATA Special Provision A58 states that aqueous solutions containing 24 percent or less alcohol by volume are not subject to the regulations.

SECTION 15: Regulatory information

15.1. US Federal regulations

Ethanol (64-17-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Methanol (67-56-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 %

15.2. International regulations

CANADA

Ethanol (64-17-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects
methanol (67-56-1)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations

No additional information available

15.3. US State regulations

Ethanol (64-17-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	
methanol (67-56-1)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	Yes	No	No	

Actigel ALD Superflow 4

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 16: Other information

Sources of Key data	: Data arise from reference works and literature.
Revision date	: October 22, 2015
Abbreviations and acronyms	: ACGIH - American Conference of Government Industrial Hygienists Eye dam – Eye damage PEL- Permissible Exposure Level STEL- Short-Term Exposure Limit TWA- Time Weighted Average URT irr -upper respiratory tract irritation

Full text of H-statements:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhalation) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 3	Flammable liquids, Category 3
STOT SE 1	Specific target organ toxicity (single exposure) Category 1
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H301	Toxic if swallowed
H304	May be fatal if swallowed and enters airways
H311	Toxic in contact with skin
H319	Causes serious eye irritation
H331	Toxic if inhaled
H370	Causes damage to organs

The information contained herein is presented in good faith and is believed to be correct as of the date prepared, but does not purport to be all inclusive. Regulatory requirements are subject to change and may differ depending on location. It is the customer's responsibility to ensure that its activities are in compliance with local, state, federal or provincial laws.

No information contained in this document is to be taken as a warranty for which Sterogene Bioseparations, Inc. bears responsibility. Sterogene shall not be held liable for any damage resulting from handling or from contact with the product. All materials may present hazards and should be used with caution. Although specific hazards are described, we cannot guarantee that these are the only hazards that exist.