MATERIAL SAFETY DATA SHEET

According to EC Directive 91/155 EC
Date: 02/02/04

SECTION 1–CHEMICAL INFORMATION

1.1 Product Details:
Trade Name: Alpha Select Competent Cells

1.2 Company Details :
Manufacturer/ Supplier : Bioline
Suite 212a, National Innovation Centre, Australian Technology Park
EVELEIGH
NSW 2015

Further Information Obtainable from:
Technical Services
Details as above

1.3 Emergency Details:
24-Hour Contact in case of emergency:
Vergiftungs-Informations-Zentrale
Mathilden Strasse 1
79106 Freiburg
GERMANY
Tel: +49 (0) 761 19240.

SECTION 2–COMPOSITION/INFORMATION ON INGREDIENT

Substance Name:
The hazards indentified with this product are those associated with the following component (s):
Dimethyl Sulfoxide 0–10% Cas. #67-68-5 SARA 313: No
Glycerol 0–10% Cas. #56-81-5 SARA 313: No

SECTION 3–HAZARDOUS IDENTIFICATION

NFPA Rating/HMIS Rating
Health: 0
Flammability: 0
Reactivity: 0

Emergency Overview: The hazards identified with this product are those associated with the following component(s):
Dimethyl Sulfoxide and Glycerol.
For additional information on toxicity, please refer to Sec. 11.

SECTION 4–FIRST AID MEASURES

Oral Exposure: If swallowed, wash out mouth with water provided person is conscious. Call a physician.
Inhalation Exposure: If inhaled, remove to fresh air. If not breathing give artificial respiration.
If breathing is difficult, give oxygen. Call a physician.
Dermal Exposure: In case of contact, immediately wash skin with soap and copious amounts of water.
Eye Exposure: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.
Assure adequate flushing by separating the eyelids with fingers. Call a physician.

SECTION 5–FIRE FIGHTING MEASURES

Extinguishing Media: Suitable: Water spray. Carbon Dioxide**,** dry chemical powder or appropriate foam.
Special Firefighting Procedures: Wear self contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions.
Flash point: 188.6°F, 87°C Method closed cup.
Flammability: N/A
Autoignition Temp: 301°C
Explosin Limits: Lower 3.5%, Upper: 42%

Section 6 - ACCIDENTAL RELEASE MEASURES

Procedure(s) Of Personal Precaution(s): Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves and Chemical safety googles.
Methods For Cleaning Up: Cover with dry lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.
Environmental Precaution(s): Avoid contaminating water supply. Avoid contaminating sewers and waterways with this material.
Procedure To Be Followed in Case Of Leak or Spill: Evacuate area.

SECTION 7–HANDLING AND STORAGE

Handling: Avoid prolonged or repeated exposure.
User Exposure: Avoid Inhalation. Avoid contact with DMSO solutions containing toxic materials or material with unknown toxicological properties**.** Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body. Avoid prolonged or repeated exposure.
Storage: Keep tightly closed, away from sparks and open flames. Store in a cool dry place.
Special Requirements: Store under inert gas. Hygroscropic.

SECTION 8–EXPOSURE CONTROLS/PPE

Engineering Controls: Safety shower and eye bath. Mechanical exhaust required.
Personal Protective Equipment: Goverment approved respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.
Skin Specific: Chemical resistant
General Hygiene Measures: Wash hands thoroughly after handling. Wash contaminated clothing before use.

SECTION 9–PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Physical State: Clear Liquid Color: Colorless

Property Value At temperature or Pressure

Molecular Weight: 78.13 AMU
pH: N/A
BP/BP Range: 89°C
MP/MP Range: 18.4°C
Freezing Point: N/A
Vapor Pressure: 0.42 mmHg 20°C
Vapor Density: 2.7 g/l
Saturated Vapor: N/A
SG/Density: .1 g/cm^3
Bulk Density: N/A
Odor Threshold: N/A
Volatile %: N/A
Voc Content: N/A
Water Content: N/A
Solvent Content: N/A
Evaporation Rate: N/A
Viscosity: 0.002 Pas 20°C
Surface Tension: N/A
Partition Coefficient: Log Kow: –2.03
Decomposition Temp: > 190°C
Flash Point: 88.6°F, 87°C Method: Closed cup.
Explosion Limits: Lower: 3.5%, Upper: 42%
Flammability: N/A
Autoignition Temp: 01°C
Refraction Index: 1.479
Optical Rotation: N/A
Miscellaneous Data: N/A
Sollubility in Water: Soluble
N/A = not available

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable
Conditions to Avoid: Mosture.
Materials to Avoid: Acid chlorides, Phosphorus halides, strong oxidizing agents, strong acids, strong reducing agents.
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Sulfur dioxides.
Hazardous Polymerization: Will not occur.
Hazardous Exothermic Reactions: Hazardous Exothermic Reactions: Methyl sulfoxide (DMSO) undergoes a violent exothermic reaction on mixing with copper wool and trichloroacetic acid. On mixing with potassium permanganate it will flash instantaneously. It reacts violently with: acid halides, cyanuric chloride, silicon tetrachloride, phorphorus trichloride and trioxide, thionyl chloride, magnesium perchlorate, silver flioride, methyl bromide, iodine pentafluoride, nitrogen periodate, diborane, sodium hydride and perchloric and periodic acids. When heated above its boiling point methyl sulfoxide degrades giving off formaldehyde, methyl mercaptan and sulfur dioxide.

SECTION 11- TOXICOLOGICAL INFORMATION

Acute Toxicity

Dermal/Skin
DMSO: 40gm/kg

Inhalation/Respiratory:
Not determined

Oral/Ingestion:
DMSO: 14,500 MG/KG

Target organs: Blood, Eyes, Skin

Carcinogenicity:

NTP: Not tested

IARC: Not listed

OSHA: Not regulated

SECTION 12 - ECOLOGICAL INFORMATION

Acute Ecotoxicity Tests

Test Type: LC50 FishSpecies : Onchorhynchus mykiss (Rainbow trout)Time: 96hValue: 35,000 mg/1
Test Type: EC50 Daphnia
Species : Daphnia pulex
Value: 27,500 mg/1
Test Type: EC50 Alge
Species: Lepomis macrochirus (Bluegill)
Time: 96 h
Value: > 400,000 mg/1
Test Type: LC50 Fish
Species: Pimephales promelas (Fathead minnow)
Time: 96 h
Value: 34,000 mg/1

SECTION 13–DISPOSAL CONSIDERATIONS

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations.

SECTION 14–TRANSPORT INFORMATION

DOT

Proper Shipping Name: Combustible Liquid n.o.s.
UN # NA1993
Class: Combustible Liquid
Packing Group: Packing Group III
Hazard Label: None
PIH: Not PIH

IATA

Non-Hazardous for Air Transport: non-hazardous for air transport.

SECTION 15–REGULATORY INFORMATION

US Classification and Label Text

US Statments: Combustible. Readily absorbed through skin.Target Organ (s): Eyes, Skin.

United States Regulatory Information:
Sara Listed: No
TSCA Inventory Item: Yes
Canada Regulatory Information WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

SECTION 16–OTHER INFORMATION

DISCLAIMER
For R&D use only. Not for drug, household or other uses.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide.
Bioline shall not be held liable for any damage resulting from handling or from contact with the above product.