1 Product and Company Identification

1.1 Product Name: ALDEFLUOR™ Diethylaminobenzaldehyde (DEAB) Reagent, 1.5 mM in 95% ethanol

1.2 Catalog Number: 01705

1.3 Product Use: Laboratory Chemical

1.4 Manufacturer/Supplier: STEMCELL Technologies
Suite 500-1618 Station Street
Vancouver, British Columbia V6A 1B6 Canada

1.5 In Case of Emergency Call: 1-800-667-0322

2 Hazards Identification

2.1 Classification of the substance or mixture
Flammable liquids (Category 2)
Eye irritation (Category 2B)

2.2 Label elements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H320 Causes eye irritation.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+361+353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+313 If eye irritation persists: Get medical advice/ attention.
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ALDEFLUOR™ DEAB REAGENT, 1.5 mM

P370+378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

2.3 Other hazards
No data available

3 Composition / Information on Ingredients
3.1 Substances

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethyl alcohol</td>
<td>64-17-5</td>
<td>95%</td>
<td>200-578-6</td>
</tr>
<tr>
<td>4-diethylaminobenzaldehyde</td>
<td>120-21-8</td>
<td>0.03%</td>
<td>204-377-4</td>
</tr>
</tbody>
</table>

4 First Aid Measures
4.1 Description of first aid measures
4.1.1 If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.1.2 In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

4.1.3 In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.1.4 If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in section 2.2 and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5 Fire Fighting Measures
5.1 Extinguishing Media
5.1.1 Suitable Extinguishing Media
Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

5.1.2 Unsuitable Extinguishing Media
No data available

5.2 Special hazards arising from the substance or mixture
5.2.1 Flammable Properties and Hazards
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
5.2.2 Flash Pt
No data available

5.2.3 Autoignition Pt
No data available

5.2.4 Explosive Limits
LEL: No data available
UEL: No data available

5.2.5 Hazardous Combustion Products
Carbon oxides

5.3 Fire Fighting Instructions
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7 Handling and Storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
8 Exposure Controls/Personal Protection

8.1 Exposure limits

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethyl alcohol</td>
<td>64-17-5</td>
<td></td>
<td></td>
<td>Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1000 ppm 1800 mg/m³</td>
<td>Quebec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWAEV</td>
<td>1000 ppm 1800 mg/m³</td>
<td>Quebec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>1000 ppm</td>
<td>Canada. British Columbia OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1000 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks: Upper Respiratory Tract irritation
Confirmed animal carcinogen with unknown relevance to humans

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>1000 ppm 1900 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

The value in mg/m3 is approximate.

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>1000 ppm 1900 mg/m³</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>TWA</td>
<td>1000 ppm 1920 mg/m³</td>
<td>UK. EH40 WEL – Workplace Exposure Limits</td>
</tr>
</tbody>
</table>

Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.

8.2 Engineering controls

Use mechanical exhaust or laboratory fume hood to avoid exposure.

8.3 Personal protective equipment

8.3.1 Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

8.3.2 Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

8.3.3 Respiratory protection

Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.3.4 General hygiene considerations
General industrial hygiene practice.
8.3.5 Environmental exposure controls
Do not let product enter drains.

9 Physical and Chemical Properties
9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
</tbody>
</table>

10 Stability and Reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
No data available

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions - Carbon oxides

11 Toxicological Information

11.1 Acute toxicity

<table>
<thead>
<tr>
<th>Route</th>
<th>Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>No data available</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Safety Data Sheet

ALDEFLUOR™ DEAB REAGENT, 1.5 mM  

**EFFECTIVE DATE:** 2015-05-05

**Dermal:** No data available

**Other:** No data available

11.2 **Skin corrosion/irritation**

No data available

11.3 **Serious eye damage/eye irritation**

Eyes: no data available

11.4 **Respiratory and/or skin sensitization**

No data available

11.5 **Germ cell mutagenicity**

No data available

11.6 **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

11.7 **Reproductive toxicity**

No data available

11.8 **Specific target organ toxicity - single exposure**

No data available

11.9 **Specific target organ toxicity - repeated exposure**

No data available

11.10 **Aspiration hazard**

No data available

11.11 **Potential health effects**

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion: May be harmful if swallowed.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

11.12 **Signs and symptoms of exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence (Ethanol)

11.13 **RTECS #** No data available

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12 **Ecological Information**

12.1 **Toxicity** No data available

12.2 **Persistence and degradability** No data available

12.3 **Bioaccumulative potential** No data available

12.4 **Mobility in soil** No data available

12.5 **Other adverse effects** No data available
13 Disposal Considerations

13.1 Waste disposal method
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in
igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a
licensed disposal company. Contact a licensed professional waste disposal service to dispose
of this material.

13.2 Contaminated packaging
Dispose of as unused product.

14 Transport Information

14.1 UN number
DOT 1170
ADR/RID 1170
IMDG 1170
IATA 1170

14.2 UN proper shipping name
DOT Ethanol solutions
ADR/RID ETHANOL SOLUTION
IMDG ETHANOL SOLUTION
IATA Ethanol solution

14.3 Transport hazard class(es)
DOT 3
ADR/RID 3
IMDG 3
IATA 3

14.4 Packing group
DOT II
ADR/RID II
IMDG II
IATA II

14.5 Environmental hazards
DOT Marine pollutant: No
ADR/RID No
IMDG Marine pollutant: No
IATA No

14.6 Special precautions
No data available

15 Regulatory Information

15.1 USA

SARA 302 Components:
No chemicals in this material are subject to the reporting requirements of SARA Title III,
Section 302.

SARA 313 Components:
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312:
Fire Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components
Component | CAS # | Revision Date
--- | --- | ---
ethyl alcohol | 64-17-5 | 2007-03-01

Pennsylvania Right To Know Components
Component | CAS # | Revision Date
--- | --- | ---
ethyl alcohol | 64-17-5 | 2007-03-01
Water | 7732-18-5 | 
4-diethylaminobenzaldehyde | 120-21-8 | 

New Jersey Right To Know Components
Component | CAS # | Revision Date
--- | --- | ---
ethyl alcohol | 64-17-5 | 2007-03-01
Water | 7732-18-5 | 
4-diethylaminobenzaldehyde | 120-21-8 | 

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

15.2 EU
This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

15.3 Canada
WHMIS Classification: B2 Flammable liquid
This SDS was prepared in accordance with Hazardous Products Regulations (HPR) and WHMIS 2015.

16 Other Information
16.1 Prepared by: Quality Control, STEMCELL Technologies Inc.
16.2 Revision: N/A
16.3 Notice: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product. The information contained in this Safety Data Sheet (SDS) is current as of the Effective Date shown in this document and may be subject to amendment by STEMCELL Technologies Inc.

16.4 Disclaimer: THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES.