Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

   Product Code: ST0213
   Product Name: Stellar™ Competent Cells

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

   Identified uses: For research use only. Not for use in diagnostic procedures
   Uses advised against: No information available

1.3. Details of the supplier of the safety data sheet

   Supplier:
   USA:
   Takara Bio USA, Inc.
   1290 Terra Bella Avenue
   Mountain View, CA 94043
   Phone: 800.662.2566/888.251.6618
   Web: www.clontech.com

   Europe:
   Takara Bio Europe S.A.S.
   2, avenue du president Kennedy
   78100 Saint-Germain-en-Laye France
   Phone: +33.(1).39.04.68.80
   Web: www.takara-bio.eu

   Europe:
   Takara Bio Europe AB
   Arvid Wallgrens backe 20
   41346 Goteborg, Sweden
   Phone: +46 (0) 31 758 0972
   Web: www.takara-bio.eu

   India:
   DSS Takara Bio India Pvt. Ltd.
   A-5 Mohan Co-op Industrial Estate
   New Delhi 110044 India
   Phone: +91.11.30886717

   For further information, please contact:
   Technical Support: +33.(1).39.04.68.80

1.4. Emergency telephone number

   In case of emergency, call PERS (Professional Emergency Resource Services) 1-800-633-8253 (US) or 801-629-0667 (international).
Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

2.2. Label elements

Product Identifier
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

Signal Word
None

EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances / 3.2 Mixtures

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC-No</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>200-664-3</td>
<td>67-68-5</td>
<td>5 - 10</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Listed</td>
<td>-</td>
<td>5 - 10</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice
In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation
Move to fresh air.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact
Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Ingestion
Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Not an expected route of exposure.
4.2. Most important symptoms and effects, both acute and delayed

Main Symptoms
No information available.

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

Notes to physician
Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas

6.3. Methods and material for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Take up mechanically, placing in appropriate containers for disposal.

6.4. Reference to other sections

See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions
Keep container tightly closed in a dry and well-ventilated place.
Incompatible products

None known based on information supplied.

### 7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Material Safety Data Sheet.

### Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control parameters

**Exposure limits**

Ingredients with workplace control parameters.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Secret</td>
<td>-</td>
<td>STEL 30 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td>TWA 10 mg/m³</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Italy</th>
<th>Portugal</th>
<th>Netherlands</th>
<th>Finland</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide 67-68-5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>TWA 50 ppm</td>
<td>TWA 160 mg/m³</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>-</td>
<td>TWA 10 mg/m³</td>
<td>-</td>
<td>TWA 20 mg/m³</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide 67-68-5 (5 - 10)</td>
<td>H*</td>
<td>H*</td>
<td>TWA 50 ppm</td>
<td>TWA 160 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>TWA 100 ppm</td>
<td>STEL 320 mg/m³</td>
<td>-</td>
<td>-</td>
<td>TWA 10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Trade Secret (5 - 10)</td>
<td>-</td>
<td>SS-C**</td>
<td>TWA 10 mg/m³</td>
<td>-</td>
<td>TWA 10 mg/m³</td>
</tr>
<tr>
<td>TWA 50 mg/m³</td>
<td>STEL 100 mg/m³</td>
<td>-</td>
<td>-</td>
<td>STEL 30 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Legend:

- **Derived No Effect Level (DNEL)**
  - No information available.

- **Predicted No Effect Concentration (PNEC)**
  - No information available.

#### 8.2. Exposure controls

**Engineering Measures**

Apply technical measures to comply with the occupational exposure limits. For rescue and maintenance work in storage tanks use self-contained breathing apparatus.

**Personal Protective Equipment**

- **Eye/Face Protection**
  - If splashes are likely to occur, wear: Safety glasses with side-shields

- **Hand Protection**
  - Protective gloves.

- **Skin and body protection**
  - Wear suitable protective equipment, Boots

- **Respiratory protection**
  - None under normal use conditions.

**Environmental Exposure Controls**

The product should not be allowed to enter drains, water courses or the soil.

### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Information on basic physical and chemical properties

| Physical State | Liquid |
| Appearance     | Slurry |
| Color          | No information available |
| Odor           | Unpleasant |
| Odor Threshold | No information available |
Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact: None.
Sensitivity to Static Discharge: None.

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known based on information supplied.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION
11.1. Information on toxicological effects

Acute toxicity

Product Information
Product does not present an acute toxicity hazard based on known or supplied information

Inhalation  There is no data available for this product.
Eye contact There is no data available for this product.
Skin contact There is no data available for this product.
Ingestion There is no data available for this product.

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)  97,365.00 mg/kg

Unknown acute toxicity

16.47 % of the mixture consists of ingredient(s) of unknown toxicity.
2.52 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
2.52 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
16.47 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
16.47 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
16.47 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Skin corrosion/irritation  No information available.
Serious Eye Damage/Eye Irritation No information available.
Sensitization No information available.
Mutagenic effects No information available.
Carcinogenic effects No information available.

Reproductive toxicity No information available.
STOT - Single Exposure No information available.
STOT - Repeated Exposure No information available.
Aspiration Hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

3.51 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>12350 - 25500: 96 h</td>
<td>33 - 37: 96 h Oncorhynchus mykiss g/L LC50 static 34000: 96 h Pimephales promelas mg/L LC50 41.7: 96 h Cyprinus carpio g/L LC50 40: 96 h Lepomis macrochirus g/L LC50 static</td>
<td>7000: 24 h Daphnia species mg/L EC50</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>-</td>
<td>51 - 57: 96 h Oncorhynchus</td>
<td>500: 24 h Daphnia magna mg/L</td>
</tr>
</tbody>
</table>
12.2. Persistence and degradability
No information available.

12.3. Bioaccumulative potential
No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>-2.03</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>-1.76</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

Mobility in soil
No information available.

Mobility
No information available.

12.5. Results of PBT and vPvB assessment
No information available.

12.6. Other adverse effects
No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products
Dispose of in accordance with the European Directives on waste and hazardous waste.

Contaminated packaging
Dispose of in accordance with local regulations.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN/ID no
Not regulated

14.2 Proper Shipping Name
Not regulated

14.3 Hazard Class
Not regulated

14.4 Packing group
Not regulated

14.5 Environmental Hazard
Not Applicable

14.6 Special Provisions
None

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

RID

14.1 UN/ID no
Not regulated

14.2 Proper Shipping Name
Not regulated

14.3 Hazard Class
Not regulated

14.4 Packing group
Not regulated
Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:
This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

International Inventories For research use only
TSCA Complies
DSL/NDSL -
EINECS/ELINCS -
ENCS -
IECSC Complies
KECL -
PICCS -
AICS Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
15.2. Chemical safety assessment

Chemical Safety Assessment  No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend
SVHC: Substances of Very High Concern for Authorization:

Legend  Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
TWA  Time weighted average  STEL  Short term exposure limit
Ceiling  Maximum limit value  *  Skin designation
**  Hazard Designation

Issuing Date  2016-07-21
Revision Date  2016-07-21
Reason for revision:  Not Applicable.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
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End of Safety Data Sheet