



## SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision Date 14-Nov-2022

Revision Number 3

**72382 72384 - 9-cis Retinoic Acid**

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

#### 1.1. Product identifier

**Document Number** DX21110

**Product Name** 9-cis Retinoic Acid

**Synonyms** 9-cis-retinoic acid; Aliretinoin; NSC 659772; Panretin; 9-cis RA;

**Pure substance/mixture** Substance

Contains (2E,4E,6Z,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohexen-1-yl)nona-2,4,6,8-tetraenoic acid

**Molecular weight** 300.4

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

**Recommended Use** Laboratory chemicals

**Uses advised against** No information available

#### 1.3. Details of the supplier of the safety data sheet

##### **Manufacturer**

STEMCELL Technologies SARL  
40 Rue des Berges, Miniparc Polytec, Bâtiment Sirocco, 38000 Grenoble, France  
+33 (0) 4 76 04 75 30  
STEMCELL Technologies Germany GmbH  
Stolberger Str. 200, 50933, Köln, Germany  
+33 (0) 4 76 04 75 30  
STEMCELL Technologies UK Ltd.  
Building 7100, Cambridge Research Park, Beach Drive, Waterbeach, Cambridge, UK, CB25 9TL  
+33 (0) 4 76 04 75 30

For further information, please contact

#### 1.4. Emergency telephone number

**Emergency Telephone** No information available

**Emergency Telephone - §45 - (EC)1272/2008**

**Europe** 112

### Section 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture



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Regulation (EC) No 1272/2008

|                                                  |                      |
|--------------------------------------------------|----------------------|
| Acute toxicity - Oral                            | Category 4 - (H302)  |
| Skin corrosion/irritation                        | Category 2 - (H315)  |
| Serious eye damage/eye irritation                | Category 2 - (H319)  |
| Reproductive toxicity                            | Category 1A - (H360) |
| Specific target organ toxicity (single exposure) | Category 3 - (H335)  |

### 2.2. Label elements

Contains (2E,4E,6Z,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohexen-1-yl)nona-2,4,6,8-tetraenoic acid



### Signal word

Danger

### Hazard statements

#### Hazard statements

- H302 - Harmful if swallowed
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H335 - May cause respiratory irritation
- H360 - May damage fertility or the unborn child
- H303 - May be harmful if swallowed

### Precautionary Statements - EU (§28, 1272/2008)

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P308 + P313 - IF exposed or concerned: Get medical advice/attention

### Additional information

This product requires tactile warnings if supplied to the general public

### 2.3. Other hazards

No information available

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

| Chemical name | EC No. | CAS No. | Weight-% | Classification according to | REACH |
|---------------|--------|---------|----------|-----------------------------|-------|
|---------------|--------|---------|----------|-----------------------------|-------|



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|                                                                                           |   |           |     | Regulation (EC) No.<br>1272/2008 [CLP]                                                                     | Registration<br>Number |
|-------------------------------------------------------------------------------------------|---|-----------|-----|------------------------------------------------------------------------------------------------------------|------------------------|
| (2E,4E,6Z,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohexen-1-yl)nona-2,4,6,8-tetraenoic acid | - | 5300-03-8 | 100 | Acute Tox. 4 (H302)<br>Skin Irrit. 2 (H315)<br>Eye Irrit. 2A (H319)<br>STOT SE 3 (H335)<br>Repr. 1A (H360) | No data available      |

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

## Section 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

|                                           |                                                                                                                                                                                                                                                                                     |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>                     | Show this safety data sheet to the doctor in attendance.                                                                                                                                                                                                                            |
| <b>Inhalation</b>                         | IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur. Remove to fresh air.                                                                                                                                                    |
| <b>Eye contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists. |
| <b>Skin contact</b>                       | Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.                                                                                                                                              |
| <b>Ingestion</b>                          | Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.                                                                                                                       |
| <b>Self-protection of the first aider</b> | Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).                                                                                                                                                                                       |

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

|                 |                    |
|-----------------|--------------------|
| <b>Symptoms</b> | Burning sensation. |
|-----------------|--------------------|

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

|                           |                        |
|---------------------------|------------------------|
| <b>Note to physicians</b> | Treat symptomatically. |
|---------------------------|------------------------|

## Section 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing media

|                                     |                                                                                                         |
|-------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b> | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
|-------------------------------------|---------------------------------------------------------------------------------------------------------|



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**Unsuitable Extinguishing Media** No information available.

### 5.2. Special hazards arising from the substance or mixture

**Specific hazards arising from the chemical** No information available.

### 5.3. Advice for firefighters

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## Section 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

**Other Information** Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

### 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.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections

**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** Remove contaminated clothing and shoes. Take off contaminated clothing and wash before



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reuse. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

#### General hygiene considerations

Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Storage Conditions

Keep out of the reach of children. Store locked up. Store in accordance with information listed on the Product Information Sheet (PIS).

#### 7.3. Specific end use(s)

##### Identified Uses

**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

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

##### Derived No Effect Level (DNEL)

No information available.

##### Predicted No Effect Concentration (PNEC)

No information available.

#### 8.2. Exposure controls

##### Personal protective equipment

##### Eye/face protection

If splashes are likely to occur, wear safety glasses with side-shields.

##### Hand protection

Impervious gloves. Wear suitable gloves.

##### Skin and body protection

Long sleeved clothing. Wear suitable protective clothing.



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|                                        |                                                                                                                                                                                                                   |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Respiratory protection</b>          | No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.                                          |
| <b>General hygiene considerations</b>  | Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. |
| <b>Environmental exposure controls</b> | No information available.                                                                                                                                                                                         |

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

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

|                       |                          |
|-----------------------|--------------------------|
| <b>Physical state</b> | Solid                    |
| <b>Appearance</b>     | Crystalline              |
| <b>Color</b>          | No information available |
| <b>Odor</b>           | No data available.       |
| <b>Odor threshold</b> | No data available        |

| <u>Property</u>                       | <u>Values</u>                                         | <u>Remarks • Method</u> |
|---------------------------------------|-------------------------------------------------------|-------------------------|
| <b>pH</b>                             | No data available                                     | None known              |
| <b>Melting point / freezing point</b> | No data available                                     | None known              |
| <b>Boiling point / boiling range</b>  | No data available                                     | None known              |
| <b>Flash point</b>                    | No data available                                     | None known              |
| <b>Evaporation rate</b>               | No data available                                     | None known              |
| <b>Flammability (solid, gas)</b>      | Product is not flammable.                             | None known              |
| <b>Flammability Limit in Air</b>      |                                                       | None known              |
| <b>Upper flammability limit:</b>      | No data available                                     |                         |
| <b>Lower flammability limit:</b>      | No data available                                     |                         |
| <b>Vapor pressure</b>                 | No data available                                     | None known              |
| <b>Vapor density</b>                  | No data available                                     | None known              |
| <b>Relative density</b>               | No data available                                     | None known              |
| <b>Water solubility</b>               | No data available                                     | None known              |
| <b>Solubility(ies)</b>                | DMF: 20 mg/mL; DMSO: 20 mg/mL;<br>Ethanol: 0.5 mg/mL; | None known              |
| <b>Partition coefficient</b>          | No data available                                     | None known              |
| <b>Autoignition temperature</b>       | No data available                                     | None known              |
| <b>Decomposition temperature</b>      | No data available                                     | None known              |
| <b>Kinematic viscosity</b>            | No data available                                     | None known              |
| <b>Dynamic viscosity</b>              | No data available                                     | None known              |
| <b>Explosive properties</b>           | No information available                              |                         |

|                             |                          |
|-----------------------------|--------------------------|
| <b>Oxidizing properties</b> | No information available |
|-----------------------------|--------------------------|

### 9.2. Other information

|                        |                          |
|------------------------|--------------------------|
| <b>Softening point</b> | No information available |
|------------------------|--------------------------|



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|                   |                                                |
|-------------------|------------------------------------------------|
| Molecular weight  | 300.4                                          |
| Molecular formula | C <sub>20</sub> H <sub>28</sub> O <sub>2</sub> |
| VOC Content (%)   | No information available                       |
| Liquid Density    | No information available                       |
| Bulk density      | No information available                       |

## Section 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Reactivity No information available.

### 10.2. Chemical stability

Stability Stable under recommended transport or storage conditions.

#### Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

### 10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

### 10.5. Incompatible materials

Incompatible materials Strong oxidizing agents.

### 10.6. Hazardous decomposition products

Hazardous decomposition products Carbon dioxide (CO<sub>2</sub>). Carbon monoxide.

## Section 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### Information on likely routes of exposure

#### Product Information



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|              |                                                                                                                                                                                                |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation   | Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.                                                                                   |
| Eye contact  | Irritating to eyes. Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components).                                                    |
| Skin contact | Causes skin irritation. (based on components). Specific test data for the substance or mixture is not available.                                                                               |
| Ingestion    | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Specific test data for the substance or mixture is not available. Harmful if swallowed. (based on components). |

#### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** Redness. May cause redness and tearing of the eyes.

#### Numerical measures of toxicity

##### Acute toxicity

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

ATEmix (oral) 500.00 mg/kg

**Unknown acute toxicity** 100 % of the mixture consists of ingredient(s) of unknown toxicity.  
0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.  
100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.  
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).  
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).  
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

#### Product Information

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** Classification based on data available for ingredients. Irritating to skin.

#### Product Information

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Irritating to eyes.

#### Product Information

**Respiratory or skin sensitization** No information available.

#### Product Information



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**Germ cell mutagenicity** No information available.

Product Information

**Carcinogenicity** No information available.

Product Information

**Reproductive toxicity** Classification based on data available for ingredients.

Product Information

**STOT - single exposure** May cause respiratory irritation.

Product Information

**STOT - repeated exposure** No information available.

Product Information

**Aspiration hazard** No information available.

## Section 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity** The environmental impact of this product has not been fully investigated.

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment.

Product Information

### 12.2. Persistence and degradability

**Persistence and degradability** No information available.

### 12.3. Bioaccumulative potential

**Bioaccumulation** No information available.

### 12.4. Mobility in soil

**Mobility in soil** No information available.

### 12.5. Results of PBT and vPvB assessment

**PBT and vPvB assessment** No information available.

### 12.6. Other adverse effects



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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 local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

### Section 14: TRANSPORT INFORMATION

**Note:** Transport in accordance with local, state, and federal regulations.

#### IMDG

|                                                                          |                          |
|--------------------------------------------------------------------------|--------------------------|
| 14.1 UN Number                                                           | Not regulated            |
| 14.2 UN proper shipping name                                             | Not regulated            |
| 14.3 Transport hazard class(es)                                          | Not regulated            |
| 14.4 Packing Group                                                       | Not regulated            |
| 14.5 Marine pollutant                                                    | Not applicable           |
| 14.6 Special Provisions                                                  | None                     |
| 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code | No information available |

#### RID

|                                 |                |
|---------------------------------|----------------|
| 14.1 UN Number                  | Not regulated  |
| 14.2 UN proper shipping name    | Not regulated  |
| 14.3 Transport hazard class(es) | Not regulated  |
| 14.4 Packing Group              | Not regulated  |
| 14.5 Environmental hazard       | Not applicable |
| 14.6 Special Provisions         | None           |

#### ADR

|                                 |                |
|---------------------------------|----------------|
| 14.1 UN Number                  | Not regulated  |
| 14.2 UN proper shipping name    | Not regulated  |
| 14.3 Transport hazard class(es) | Not regulated  |
| 14.4 Packing Group              | Not regulated  |
| 14.5 Environmental hazard       | Not applicable |
| 14.6 Special Provisions         | None           |

#### IATA

|                |               |
|----------------|---------------|
| 14.1 UN Number | Not regulated |
|----------------|---------------|



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|                                 |                |
|---------------------------------|----------------|
| 14.2 UN proper shipping name    | Not regulated  |
| 14.3 Transport hazard class(es) | Not regulated  |
| 14.4 Packing Group              | Not regulated  |
| 14.5 Environmental hazard       | Not applicable |
| 14.6 Special Provisions         | None           |

## 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

|               |                 |
|---------------|-----------------|
| TSCA          | Does not comply |
| DSL/NDL       | Does not comply |
| EINECS/ELINCS | Does not comply |
| ENCS          | Does not comply |
| IECSC         | Does not comply |
| KECL          | Does not comply |
| PICCS         | Does not comply |
| AICS          | Does not comply |

#### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - 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



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AICS - Australian Inventory of Chemical Substances

#### 15.2. Chemical safety assessment

Chemical Safety Report No information available

### Section 16: OTHER INFORMATION

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

##### Full text of H-Statements referred to under section 3

H302 - Harmful if swallowed

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H360 - May damage fertility or the unborn child

##### Legend

SVHC: Substances of Very High Concern for Authorization:

##### Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA

TWA (time-weighted average)

STEL

STEL (Short Term Exposure Limit)

Ceiling

Maximum limit value

\*

Skin designation

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

##### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product.