


SAFETY DATA SHEET:

Template

1. IDENTIFICATION

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|----------------------------|---|
| 1.1. Product Name | Stemolecule™ All-trans Retinoic Acid (ATRA) |
| 1.2. Catalog Number | 04-0021 |
| 1.3. Uses and restrictions | For research use only. Not for use in therapeutic or diagnostic applications |
| 1.4. Manufacturer/Supplier | REPROCELL, Inc.
9000 Virginia Manor Road, Suite 207
Beltsville, MD 20705
USA |
| 1.5. In Case of Emergency | <ul style="list-style-type: none">• For medical emergencies, contact your local emergency center.• For transportation emergencies, contact your local transportation authorities.• For other non-medical or environmental emergencies please call (617) 245-0030, 8:00 am-4:00 pm EST, Monday – Friday. |

2. HAZARDS IDENTIFICATION

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| 2.1. GHS Classification according to Annex II | <ul style="list-style-type: none">• Acute toxicity, oral (Category 4), H302• Acute aquatic toxicity (Category 2), H401 |
| 2.2. Signal Word | Warning |
| 2.3. Symbol |  |
| 2.4. Hazard Statement(s) | <ul style="list-style-type: none">• H302: Harmful if swallowed.• H403: Toxic to aquatic life |
| 2.5. Precautionary Statement(s) | <ul style="list-style-type: none">• P264: Wash hands thoroughly after handling.• P270: Do not eat, drink, or smoke when using this product.• P273: Avoid release into the environment• P301+P312: If SWALLOWED, call a Poison Center or a doctor/physician if you feel unwell.• P330: Rinse mouth if ingested.• P501: Dispose of contents and container to an approved waste-disposal vendor. |
| 2.6. Hazards not otherwise classified (HNOC) or not covered by GHS | None |

3. COMPOSITION/INFORMATION ON INGREDIENTS

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|-------------------|------------------------|
| 3.1 Chemical name | Stemolecule™ All-trans |
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3.2 Synonyms	(2E,4E,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohexen-1-yl)nona-2,4,6,8-tetraenoic acid Tretinoin ATRA
3.3 Chemical Formula	C ₂₀ H ₂₈ O ₂
3.4 Molecular Weight	300.44 g/mol
3.5 CAS Number	302-79-4

4. FIRST AID MEASURES

4.1 First Aid Instructions

- **General Advice:** Move out of exposure area. Consult a physician.
- **Eyes:** Check for and remove contact lenses immediately and flush thoroughly with water for at least 15 minutes. Call a physician.
- **Skin:** Immediately flush skin with copious amounts of water. Remove contaminated clothing and shoes and wash before use. Contact a physician.
- **Ingestion:** If swallowed, wash mouth out with water provided person is conscious. Do not induce vomiting. Loosen tight clothing. Contact a physician.
- **Inhalation:** If inhaled, remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, call a physician.
- **Puncture Wounds:** Wash thoroughly with soap and water. Allow the wound to bleed freely. Contact a physician

4.2 Most important Symptoms/Effects, acute and immediate

To the best of our knowledge, the health and toxicological properties of this material have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIRE FIGHTING MEASURES

5.1. Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

Carbon oxides

5.3 Special protective equipment and precautions for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

Use personal protective equipment (see section 8). Avoid direct contact with skin or eyes and prevent inhalation of dust. Ensure adequate ventilation.

6.2 Environmental precautions

Do not let product enter drains.



6.2 Methods and materials for containment and clean up.

Sweep into an appropriate container. Avoid raising dust. Ensure complete closure of container. Ventilate area and wash spill site after material pickup is complete. Dispose of waste following proper disposal method (see section 13).

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

- Use in a chemical fume hood, with air supplied by an independent system.
- Avoid inhalation, contact with eyes, skin, and clothing.
- Avoid prolonged or repeated exposure.
- Provide appropriate exhaust ventilation at places where dust is formed.
- For other precautions see section 2.5.

7.2. Conditions for safe storage, including any incompatibilities

Store at 4 °C or below, protected from light. Following reconstitution, store aliquots at -20 °C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

No known occupational exposure limits values.

8.2 Appropriate engineering controls

Safety shower and eyewash. Mechanical exhaust required. See Section 7.

8.3 Protection measures and Personal Protective Equipment

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling.

- **Respiratory Protection:** Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EN 143) respirator cartridges.
- **Eye Protection:** Chemical safety goggles.
- **Skin Protection:** Protective gloves and lab coat. Use nitrile rubber gloves with a minimum layer thickness of 0.11 mm.

9. PHYSICAL/CHEMICAL PROPERTIES

9.1 Appearance:

Yellow to light orange crystalline powder

9.2 Odor:

No data available.

9.3 Odor threshold

No data available.

9.4 pH

No data available.

9.5 Melting point/freezing point

Melting point/range: 180-181 °C (356-358 °F)

9.6 Initial boiling point and boiling range

No data available.

9.7 Flashpoint

No data available.



9.8 Evaporation rate	No data available.
9.9 Flammability (solid, gas)	No data available.
9.10 Upper/lower flammability or explosive limit	No data available.
9.11 Vapor pressure	No data available.
9.12 Vapor density	No data available.
9.13 Relative density	No data available.
9.14 Solubility	100 mM in Dimethylsulfoxide, 9 mM in 95% Ethanol.
9.15: Partition coefficient, n-octanol/water	log Pow: 6.7
9.16 Autoignition temperature	No data available.
9.17 Decomposition temperature	No data available.
9.18 Viscosity	No data available.
9.19 Explosive properties	No data available.
9.20 Oxidizing properties	No data available.

10. STABILITY/REACTIVITY

10.1 Reactivity	No data available.
10.2 Chemical stability	Stable under recommended conditions.
10.3 Possibility of hazardous reactions	No data available.
10.4 Conditions to avoid	Light, heat, moisture.
10.5 Incompatible materials	Oxidizing agents, strong acids and alkalis.
10.6 Hazardous decomposition products	May emit toxic fumes during combustion. No decomposition information is known.

11. TOXICOLOGICAL INFORMATION

11.1 Toxicological effects:	<ul style="list-style-type: none">• Acute Toxicity: LD50 Oral, Rat: 2000 gm/kg LD50 SC, Rat: 53 mg/kg LD50 Intraperitoneal, Rat: 96 mg/kg LD50 Oral, Mouse: 1100 mg/kg LD50 SC, Mouse: 253 mg/kg LD50 Intraperitoneal, Mouse: 208 mg/kg LD50 IV, Mouse: 92 mg/kg Inhalation: no data available.• Skin corrosion/irritation: No data available.• Serious eye damage/irritation: Rabbit: No eye irritation• Respiratory or skin sensitization: No data available.• Germ cell mutagenicity: No data available.
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- **Carcinogenicity:**
 - IARC: No components of this product present at level greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen.
 - ACGIH: No components of this product present at level greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen.
 - NTP: No components of this product present at level greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen.
 - OSHA: No components of this product present at level greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen.
 - **Reproductive toxicity:** No data available.
 - **Specific target organ toxicity, single exposure:** No data available.
 - **Specific target organ toxicity, repeated exposure:** No data available.
 - **Aspiration hazard:** No data available.
- 11.2 Symptoms related to the physical, chemical, and toxicological characteristics
- 11.3 Effects of short-term exposure
- 11.4 Effects of long-term exposure
- 11.5 Numerical measures of toxicity
- 11.6 Other information

No data available.

No data available.

No data available.

No data available.

See RTECS No: VH6475000. To the best of our knowledge, the toxicological properties of this product have not been fully investigated.

12. ECOLOGICAL INFORMATION

- 12.1 Toxicity
- Toxicity to fish: LC50 *Danio rerio* (Zebrafish), 4.64 mg/L.
- 12.2 Persistence and degradability
- >60%- readily biodegradable.
- 12.3 Bioaccumulative potential
- No data available.
- 12.4 Mobility in soil
- No data available.
- 12.5 Results of PBT and vPvB assessment
- No data available.
- 12.6 Other adverse effects
- Toxic to aquatic life. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.



13. DISPOSAL CONSIDERATIONS

13.1 Disposal method

Offer surplus and non-recyclable solutions to a licensed disposal company

13.2 Personal safety

Refer to Section 8.

14. TRANSPORT INFORMATION**DOT:** Not dangerous goods**IMDG:** UN Number 3077, Class 9, Packing Group III, EMS-NO: F-A, S-F. Proper shipping name: Environmentally hazardous substance, solid, n.o.s (Tretinoin)**IATA:** UN Number 3077, Class 9, Packing Group III, EMS-NO: F-A, S-F. Proper shipping name: Environmentally hazardous substance, solid, n.o.s (Tretinoin)**Additional information:** EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packaging and combination packaging containing inner packaging with Dangerous Goods >5 L for liquids or >5 kg for solids**15. REGULATORY INFORMATION**

U.S. Federal Regulations

- SARA 313 components
- SARA 302 components
- SARA 311/312 Hazards
- Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see CFR 61)

U.S. State Regulations

- California Proposition 65
- Massachusetts Right To Know Components
- Pennsylvania Right To Know Components
- New Jersey Right To Know Components

WHMIS Hazard Class

Regulation (EC) No 1272/2008 (EU-GHS/CLP)

Directive 67/548/EC & Directive 1999/45/EC

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels.

Does not contain any components subject to reporting. Acute health hazard.

WARNING: This product can expose you to Retinoic acid, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.

Does not contain any components subject to reporting.

Tretinoin, CAS No. 302-79-4

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Not controlled under WHMIS (Canada).

Not regulated

Not regulated



16. OTHER INFORMATION

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. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Stemgent, Inc. shall not be held liable for any damage resulting from handling or from contact with the product. See Stemgent, Inc. website for terms and conditions of sale.

Preparation Date

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Version No.

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Prepared By

Quality Control

END OF SAFETY DATA SHEET