

SAFETY DATA SHEET

1. IDENTIFICATION

- | | |
|----------------------------|---|
| 1.1. Product Name | Stemolecule™ Y27632 in Solution |
| 1.2. Catalog Number | 04-0012-02 |
| 1.3. Uses and restrictions | For research use only. Not for use in diagnostic or therapeutic applications |
| 1.4. Manufacturer/Supplier | Stemgent®, Inc.
4 Hartwell Place
Lexington, MA 02421 USA
(617) 245-0000 |
| 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 non-environmental emergencies please call (617) 245-0030, 8:00 am-4:00 pm EST, Monday – Friday. |

2. HAZARDS IDENTIFICATION

- | | |
|--|---|
| 2.1. Classification | GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) <ul style="list-style-type: none"> Flammable liquids (Category 4), H227 |
| 2.2. Signal Word | Warning |
| 2.3. Symbol | None. |
| 2.4. Hazard Statement(s) | Combustible liquid |
| 2.5. Precautionary Statement(s) | <ul style="list-style-type: none"> P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P280: Wear protective gloves/protective clothing/eye protection/face protection. P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. P403 + P235: Store in a well-ventilated place. Keep cool. P501: Dispose of contents/container to an approved waste disposal plant. |
| 2.6. Hazards not otherwise classified (HNOC) or not covered by GHS | None. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Chemical Name	3.2. Synonyms	3.3. Chemical Formula	3.4. Molecular Weight	3.5. CAS Number
(Stemolecule™ Y27632 in Solution	1R, 4r)-4-((R)-1-aminoethyl)-N-(pyridine-4-yl)cyclohexanecarboxamide dihydrochloride	C ₁₄ H ₂₃ Cl ₂ N ₃ O	320.3 g/mol	146986-50-7



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Dimethyl Sulfoxide	DMSO	C ₂ H ₆ OS	78.13 g/mol	67-68-5
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HAZARDOUS COMPONENTS WITHIN MIXTURE

Component	CAS-No./EC-No.	Classification	Concentration
Dimethyl Sulfoxide	CAS-No: 67-68-5 EC-No: 200-664-3	Flam. Liq. 4; H227	N/A

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 wound to bleed freely. Contact a physician.

4.2. Most Important Symptoms/effects, acute and immediate

Described in section 2.

4.3. Indications of 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, nitrogen oxides, hydrogen chloride gas, sulfur oxides
- 5.3. Special protective equipment and precautions for fire-fighters Wear self contained breathing apparatus and full turnout gear for firefighting if necessary.



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6. ACCIDENTAL RELEASE MEASURES

- | | |
|---|---|
| 6.1. Personal precautions, protective equipment, and emergency procedures | Avoid breathing vapours, mist or gas. Remove all sources of ignition. Beware of vapours accumulating from explosive concentration. Vapours can accumulate in low areas. Ensure adequate ventilation. |
| 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 clean up | Remove ignition points. Ventilate area and contain spillage. Soak up with inert absorbent material and dispose of as hazardous waste. In case of mist formation, use a respirator or self-contained breathing apparatus (SCBA). |

7. HANDLING AND STORAGE

- | | |
|--|--|
| 7.1 Precautions for safe handling | <ul style="list-style-type: none"> • 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. |
| 7.1 Conditions for safe storage, including any incompatibilities | Store at -20°C protected from light. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- | | |
|--|---|
| 8.1. Control Parameters | Dimethyl Sulfoxide, CAS-No. 67-68-5
Dimethyl Sulfoxide Exposure Levels <ul style="list-style-type: none"> • TWA: 250ppm – USA. Workplace Environmental Exposure Levels (WEEL) |
| 8.2. Appropriate engineering controls | Safety shower and eye bath. Mechanical exhaust required. |
| 8.3. Protection measures and Personal Protective Equipment | Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. |
| <ul style="list-style-type: none"> • Respiratory Protection | Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. |
| <ul style="list-style-type: none"> • Eye Protection | Chemical safety goggles. |
| <ul style="list-style-type: none"> • Skin Protection | Protective gloves and lab coat. Use nitrile rubber gloves with a minimum thickness of 0.2mm. |

9. PHYSICAL/CHEMICAL PROPERTIES

- | | |
|-----------------|--------------------|
| 9.1. Appearance | Colorless liquid. |
| 9.2. Odor | No data available. |



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9.3. Odor Threshold	No data available.
9.4. pH	No data available.
9.5. Melting point/freezing point	No data available.
9.6. Initial boiling point and boiling range	No data available.
9.7. Flash point	89°C (192°F)
9.8. Evaporation rate	No data available.
9.9. Flammability (solid, gas);	No data available.
9.10. Upper/lower flammability or explosive limits	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(ies)	No data available.
9.15. Partition coefficient: n-octanol/water	No data available.
9.16. Auto-ignition 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	This product is stable under recommended storage conditions.
10.3. Possibility of hazardous reactions	No data available.
10.4. Conditions to Avoid	Prolonged heating above 150°C (302°F) can cause rapid, exothermic decomposition.
10.5. Incompatible materials	Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents, Strong bases.
10.6. Hazardous decomposition products	Sulfur dioxide, formaldehyde, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, and bis (methylthio) methane.

11. TOXICOLOGICAL INFORMATION

11.1. Toxicological effects	
<ul style="list-style-type: none"> Acute toxicity 	<ul style="list-style-type: none"> Oral LD-50 (male rat): 14,500 – 28,300 mg/kg Inhalation LD-50 (rat): 4 hrs – 40250 ppm Dermal LD-50 (rat): 40,000 mg/kg



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- Skin corrosion/irritation
 - Serious eye damage/eye irritation
 - Respiratory or skin sensitization
 - Germ cell mutagenicity
 - Skin irritation (human): Mild
 - Repeated skin application (human): Slight irritation
 - Skin sensitization (human): None by EC protocols
 - Eye irritation (human): None by EC protocols
 - Carcinogenicity
 - Reproductive Toxicity
- No data available.
- Mouse
- Lymphocyte
 - Cytogenetic analysis
 - Mutation in mammalian somatic cells
 - DNA damage
- Rat
- Cytogenetic analysis
 - IARC: No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen.
 - ACGIH: No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.
 - NTP: No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen.
 - OSHA: No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.
- Reproductive toxicity – Rat – intraperitoneal
- Effects on Fertility: Abortion.
 - Effects on Fertility: Post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).
- Reproductive toxicity – Rat – Subcutaneous
- Effects on Fertility: Post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).
 - Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth)
- Reproductive – Mouse – Oral
- Effects on Fertility: Pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea).
 - Effects on Embryo or Fetus: Fetotoxicity (except death, e.g. stunted fetus).
 - Specific developmental abnormalities: Musculoskeletal system.
- Developmental Toxicity – Mouse – intraperitoneal
- Effects on Embryo or Fetus: Fetotoxicity (except death, e.g. stunted fetus).
 - Specific developmental abnormalities: Musculoskeletal system .



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- 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 Effects due to ingestion may include: Nausea, Fatigue, Headache.
- 11.3. Effects of Short-Term Exposure No data available.
- 11.4. Effects of Long-Term Exposure
 - Oral study (13 weeks, rat): LOEL = 8800 mg/kg/day (minor target organ effects: liver) (reduced weight gain): NOEL = 1100 mg/kg/day
 - Inhalation study (6 weeks, rat): NOEL = 60 ppm
- 11.5. Numerical measures of toxicity No data available.
- 11.6. Other Information Eyes – Eye disease – Based on Human Evidence

12. ECOLOGICAL INFORMATION

- 12.1. Toxicity
 - LC50 – Pimephales promelas (fathead minnow) – 34,000 mg/l – 96h
 - LC50 – Oncorhynchus mykiss (rainbow trout) – 35,000 mg/l – 96h
 - EC50 – Daphnia magna (Water flea) – 24,600 mg/l – 48h
 - EC50 – Pseudokirchneriella subcapitata (green algae) – 17,000 mg/l – 72h
- 12.2. Persistence and degradability Result: 31% - According to the results of tests of biodegradability this product is not 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 No data available.

13. DISPOSAL CONSIDERATIONS

- 13.1. Disposal Method Waste must be disposed of in accordance with federal, state, and local environmental control regulations.
- 13.2. Personal safety Refer to section 8.

14. TRANSPORT INFORMATION

This product is considered non-hazardous for transport.

15. REGULATORY INFORMATION

U.S. Federal Regulations



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<ul style="list-style-type: none">• SARA 313 components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels.
<ul style="list-style-type: none">• SARA 302 components	Does not contain any components subject to reporting.
<ul style="list-style-type: none">• SARA 311/312 Hazards	Fire hazard
<ul style="list-style-type: none">• Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see CFR 61)	Does not contain any components subject to reporting.
U.S. State Regulations	
<ul style="list-style-type: none">• California Proposition 65	Does not contain any components subject to reporting.
<ul style="list-style-type: none">• Massachusetts Right To Know Components	Does not contain any components subject to reporting.
<ul style="list-style-type: none">• Pennsylvania Right To Know Components	Does not contain any components subject to reporting.
<ul style="list-style-type: none">• New Jersey Right To Know Components	Dimethyl Sulfoxide, CAS No. 67-68-5
WHMIS Hazard Class	Not controlled under WHMIS (Canada).

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

February 19, 2016

Version No.

1.2

Prepared by

Quality Control

END OF SAFETY DATA SHEET



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