

SAFETY DATA SHEET

Version 1.0
Revision Date 09/29/2026
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SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : **Clenbuterol 40 mcg/mL Solution (30 mL)**
Product Number : CLEN-30ML
Brand : 4AminoLabs
CAS-No. (active) : 21898-19-1
Reference batch : See container label

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

Identified uses : Laboratory research and analytical reference use.
Uses advised against : Not for human or veterinary use. Not a drug, dietary supplement, food, or cosmetic.
Supplied under the TSCA R&D Exemption (40 CFR Section 720.36); it is the recipient's responsibility to comply with the requirements of the R&D exemption.

1.3 Details of the supplier of the safety data sheet

Company : 4AminoLabs
1001 S. Main Street, STE 600
Kalispell, MT 59901
UNITED STATES
Telephone : +1 (256) 472-1983
E-mail : sales@4aminolabs.com
Website : www.4aminolabs.com

1.4 Emergency telephone number

Emergency Phone # : Poison Control Center (US): 1-800-222-1222 (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 3

Classification is based on the actual concentrations of the ingredients in the finished product (GHS mixture rules). The flammable-liquid classification is applied conservatively on the basis of the ethanol content; the flash point of the mixture has not been measured.

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H226 Flammable liquid and vapour.

Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Vapours of the ethanol component may form flammable mixtures with air on heating.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture (solution)

Components

Chemical name	CAS-No.	Concentration
Clenbuterol hydrochloride Synonyms: 4-amino- α -[(tert-butylamino)methyl]-3,5-dichlorobenzyl alcohol hydrochloride Formula: $C_{12}H_{18}Cl_2N_2O \cdot HCl$ Molecular weight: 313.65 g/mol	21898-19-1	40 mcg/mL (1.2 mg per 30 mL)
Water (deionized)	7732-18-5	Balance
Ethanol	64-17-5	10 % v/v

Carrier: deionized water with 10 % v/v ethanol.

SECTION 4. FIRST AID MEASURES

General advice : Show this safety data sheet to the doctor in attendance.
If inhaled : After inhalation: fresh air. Call in physician if symptoms develop.
In case of skin contact : Take off immediately all contaminated clothing. Rinse skin with plenty of water/ shower. Consult a physician.
In case of eye contact : After eye contact: rinse out with plenty of water for at least 15 minutes. Remove contact lenses. Consult an ophthalmologist.
If swallowed : After swallowing: rinse mouth, make victim drink water (two glasses at most). Do not induce vomiting. Consult a physician.
Most important symptoms and effects, both acute and delayed : Clenbuterol is a potent beta-2 adrenergic agonist; exposure may cause rapid heart rate, palpitations, tremor, nervousness, headache, low blood potassium, and elevated blood glucose. See also section 11.
Protection of first-aiders : For personal protection see section 8.
Notes to physician : Treat symptomatically. Monitor heart rate, ECG, serum potassium and glucose. Beta-blockers may be considered under medical supervision.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray, alcohol-resistant foam, dry powder, carbon dioxide (CO₂).

Unsuitable extinguishing media	: Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	: Flammable liquid and vapour (ethanol component). Vapours are heavier than air and may travel to a source of ignition. Containers may burst on heating.
Hazardous combustion products	: Carbon oxides Nitrogen oxides (NO _x)
Further information	: Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	: In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of vapours and aerosols. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.
Environmental precautions	: Do not let product enter drains. Prevent release to the environment.
Methods and materials for containment and cleaning up	: Take up with liquid-absorbent material (e.g. vermiculite, sand, universal binder). Place in a closed, labeled container. Clean the affected area with soap and water. Dispose of properly (see section 13).

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	: For precautions see section 2. Handle only by qualified personnel in a laboratory setting. Work in a fume hood when transferring or aliquoting. Avoid contact with skin and eyes. Keep away from open flames and hot surfaces.
Hygiene measures	: Change contaminated clothing immediately. Wash hands after working with substance. Do not eat, drink, or smoke in work areas.
Further information on storage conditions	: Tightly closed. Protect from light. Store upright in a well-ventilated place.
Storage class	: 3, Flammable liquids
Recommended storage temperature	: 68 - 77 °F / 20 - 25 °C
Materials to avoid	: Strong oxidizing agents, strong acids, alkali metals, acid chlorides.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Component	CAS-No.	Value type	Control parameter	Basis
Clenbuterol hydrochloride	21898-19-1	-	No established limit	-
Water (deionized)	7732-18-5	-	No established limit	-
Ethanol	64-17-5	TWA	1,000 ppm 1,900 mg/m ³	OSHA Z-1
		STEL	1,000 ppm	ACGIH

Engineering measures	: Use a fume hood when transferring, heating, or aerosolizing. Provide an eyewash station and safety shower.
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Personal protective equipment

Respiratory protection	: Not required under normal use in a fume hood. If vapours or aerosols are generated, use a NIOSH-approved respirator with organic vapour cartridges and P100 prefilters.
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Hand protection	: Material: Nitrile rubber Glove thickness: minimum 0.11 mm Protective index: full contact and splash contact Remarks: Inspect gloves before use and dispose of after contamination.
Eye protection	: Chemical splash goggles or safety glasses with side shields tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
Skin and body protection	: Laboratory coat. Impervious clothing as needed for the task.
Hygiene measures	: Change contaminated clothing. Wash hands after working with substance.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid, clear solution
Color	: Colorless
Odor	: Faint, alcoholic
Odor Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Boiling point/boiling range	: No data available
Flash point	: Not determined for the mixture. Literature value for 10 % v/v ethanol in water: approx. 49 °C (120 °F) closed cup. Classified as a Category 3 flammable liquid.
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Upper/lower explosion limit	: No data available
Vapor pressure	: No data available
Relative vapour density	: No data available
Relative density	: approx. 0.99
Water solubility	: Solvent carrier is miscible with water; soluble (clenbuterol hydrochloride)
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: None
Molecular weight	: 313.65 g/mol (clenbuterol hydrochloride)
Nominal concentration	: 40 mcg/mL; (1.2 mg per 30 mL)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No data available
Chemical stability	: The product is chemically stable under standard ambient conditions (room temperature).
Possibility of hazardous reactions	: Vapours may form explosive mixtures with air on heating. Ethanol may react violently with strong oxidizing agents.
Conditions to avoid	: Heat, flames, sparks, direct light, moisture.
Incompatible materials	: Strong oxidizing agents, strong acids, alkali metals, acid chlorides.
Hazardous decomposition products	: In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Not classified for this solution (active content approx. 0.004 %). Pure clenbuterol hydrochloride: Acute Tox. 3 (Oral).

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

May cause mild, transient irritation (ethanol).

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

Not classified for this solution (below the 0.1 % limit). Pure clenbuterol hydrochloride: Carc. 2.

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 on OSHA's list of regulated carcinogens.

Reproductive toxicity

Not classified for this solution (below the 0.1 % limit). Pure clenbuterol hydrochloride: Repr. 1B.

Specific target organ toxicity - single exposure

No data available. Beta-2 adrenergic agonist: cardiovascular system.

Specific target organ toxicity - repeated exposure

No data available

Solvent carrier

Ethanol at 10 % v/v in water: may cause mild, transient eye irritation.

Aspiration hazard

No data available

11.2 Additional Information

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Pharmacologically active substance; avoid release to the environment. This product neither contains, nor was manufactured with, a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Waste material must be disposed of in accordance with national, state, and local regulations using a licensed waste disposal contractor. Collect as non-halogenated organic solvent waste. Leave chemicals in original containers. No mixing with other waste. Do not pour down the drain.
- Contaminated packaging : Handle uncleaned containers like the product itself.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN-Number: UN1993 Class: 3 Packing group: III
Proper shipping name: Flammable liquid, n.o.s. (Ethanol)
Inner packagings of 30 mL may be shipped as Limited Quantity (Y344) where permitted.

IMDG-Code

UN-Number: UN1993 Class: 3 Packing group: III EMS-No: F-E, S-E
Proper shipping name: FLAMMABLE LIQUID, N.O.S. (Ethanol)
Marine pollutant: No

National Regulations

49 CFR (DOT)

UN-Number: UN1993 Class: 3 Packing group: III
Proper shipping name: Flammable liquid, n.o.s. (Ethanol)
Inner packagings of 1 L or less may be shipped as Limited Quantity (49 CFR 173.150(b)). If the flash point is determined to be 38 °C (100 °F) or higher, the product may be reclassified as a combustible liquid for domestic ground transport (49 CFR 173.120(b)(2)); if 60 °C (140 °F) or higher and not bulk, it is not regulated.

Poison Inhalation Hazard : No

Special precautions for user : Keep away from heat and ignition sources during transport.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 302 / 304 Extremely Hazardous Substances

This material does not contain any components with a section 302 EHS TPQ or section 304 EHS RQ.

- SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
- SARA 313 : 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.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP) as defined by the U.S. Clean Air Act Section 112 (40 CFR 61), nor any Class I or Class II ODS.

Clean Water Act

This product does not contain any Hazardous Substances listed under Section 311, Table 116.4A, or toxic or priority pollutants under Section 307.

US State Regulations

Massachusetts Right To Know	: Ethanol (64-17-5)
Pennsylvania Right To Know	: Ethanol (64-17-5)
New Jersey Right To Know	: Ethanol (64-17-5)
Maine / Vermont / Washington Chemicals of High Concern	: Product does not contain any listed chemicals.
California Prop. 65	: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Inventories

TSCA	: Product contains substance(s) not listed on the TSCA inventory. Supplied for research and development use only under 40 CFR 720.36.
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SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH - American Conference of Governmental Industrial Hygienists; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EMS - Emergency Schedule (IMDG); GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA-DGR - International Air Transport Association Dangerous Goods Regulations; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population; NIOSH - National Institute for Occupational Safety and Health; NTP - National Toxicology Program; ODS - Ozone Depleting Substance; OSHA - Occupational Safety and Health Administration; PPE - Personal Protective Equipment; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; STEL - Short Term Exposure Limit; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average.

For research use only. Not for human or veterinary use. The information is believed to be correct but is not exhaustive and shall be used solely as a guideline, based on current knowledge of the chemical substance or mixture, and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. 4AminoLabs shall not be held liable for any damage resulting from handling or from contact with the above product. The burden of safe use rests with the user.

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