



8210 N. Austin Avenue, Morton Grove, IL 60053-0519, U.S.A.
 847-967-6000 800-323-8144
 (Monday - Friday: 7:30 a.m. - 4:00 p.m. CST)

Emergency Contact:
 INFOTRAC 800-535-5053 [U.S.A.]

Name: D-Luciferin Potassium Salt
 Code: 1-360101-100, 1-360221-200, 1-360222-200, 1-360223-200, 1-360224-200, 1-360225-200, 1-360311-200

..... **MATERIAL SAFETY DATA SHEET**

SECTION 1 PRODUCT IDENTIFICATION

Name: D-Luciferin Potassium Salt
 Code: 1-360101-100, 1-360221-200, 1-360222-200, 1-360223-200, 1-360224-200, 1-360225-200, 1-360311-200

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

Synonyms

D-(-)-Luciferin Potassium Salt; (S)-Luciferin Potassium Salt; Firefly Luciferin Potassium Salt; (S)-2-(6-Hydroxy-2-benzothiazolyl)-2-thiazoline-4-carboxylic acid; 4,5-Dihydro-2-(6-hydroxy--2Δ-benzothiazolyl)-4-thiazolecarboxylic acid; Luciferin Potassium Salt

CAS #: 115144-35-9

MF: C₁₁H₇N₂O₃S₂K

Ingredients

	<i>Concentration (%)</i>
D-Luciferin Potassium Salt (115144-35-9)	NLT 99.0%
Manufacturing Impurities	NMT 1.0%

SECTION 3 HAZARDS IDENTIFICATION.....

Precautionary Statements

See Sections 8 and 11 for further details.

The properties of this material have not been fully investigated. Use due caution in handling and use of this material.

..... **Emergency Overview**

NFPA Ratings (Scale 0-4); Health = 1; Fire = 1; Reactivity = 1;

Solid: pale yellow to yellow

Treat as a combustible solid. Keep away from ignition sources, excess heat, and oxidizing agents.

Light (photosensitive), heat, and oxygen sensitive—readily discolors or decomposes upon exposure.

May irritation to skin, eyes, mucous membranes, and upper respiratory system. May be harmful if inhaled, swallowed, or absorbed through skin.

The properties of this material have not been fully investigated. Use due caution in handling and use of this material.

Emits toxic fumes under fire conditions—potential chemical or thermal decomposition products: carbon oxides, sulfur oxides, nitrogen oxides, potassium compounds

Standard chemical handling precautions: Avoid breathing dusts. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

Target organs (possible): skin, eyes, mucous membranes, and respiratory tract

See Sections 4, 5, 6, 8, 9, and 10.

Other Hazard Information

Primary Route(s) of Entry: Skin or eye contact, inhalation, ingestion

Eye: May cause irritation.

Skin: May cause skin irritation. May be harmful if absorbed through skin.

Inhalation: May cause irritation or burns to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if ingested.

Acute See above route.

Abbreviations: NA—not applicable; NE—not established; U—unknown/not available; NL—not listed; N—no; Y—yes.; NDA-No data available.



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Chronic: See above route.
Preexisting conditions aggravated: No data available.
Symptoms: See above route.
 See Section 11 for additional toxicological data.

SECTION 4 FIRST AID MEASURES.....

Eye contact: Immediately flush eyes with copious amounts of water or eyewash solution for at least 15 minutes; lift eyelids occasionally. Get medical attention.
 Skin contact: Immediately remove contaminated clothing and shoes, then wash skin with soap and copious amounts of water. If irritation persists, consult physician.
 Inhalation: Remove to fresh air. If not breathing, give artificial respiration and keep person warm and at rest. If breathing is difficult, give oxygen; consult physician.
 Ingestion: Wash out mouth with water provided person is conscious; consult physician.
Wash contaminated clothing before reuse.
 Physician note: Symptomatic and supportive care. No specific antidote. Treatment based on physician judgment in response to reactions of the patient.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point: NA Method: NA Autoignition: NE
 OSHA Flammability Class: IIIB Explosion Limits: upper: NE
 NFPA: See Section 3 **Hazards Identification Emergency Overview** above. lower: NE

Extinguishing Media

Water spray, carbon dioxide, dry chemical powder, or appropriate foam.

Special Fire Fighting Procedures

None

Standard Fire and Explosion Hazards

Slight fire hazard--As with most organic compounds, fire is possible at elevated temperatures or from contact with an ignition source. Small amount of flammable solvent in material might support an existing fire.

Explosion potential unknown--If a substance is an organic solid, fine dust dispersed in air in sufficient concentrations in the presence of an ignition source is a potential for a dust explosion.

Take precautionary measures against static discharges. Avoid inhalation of material or combustion by-products.

Unusual Fire and Explosion Hazards

None

Hazardous Combustion or Decomposition Products

May emit carbon oxides, sulfur oxides, nitrogen oxides, potassium compounds.

SECTION 6 ACCIDENTAL RELEASE MEASURES.....

Small fire hazard. Ventilate area.
 Evacuate unnecessary people from area. Isolate spilled material.
 Wear protective clothing to prevent contact with skin and eyes (lab coat, gloves, safety glasses).
 Wear NIOSH/MSHA approved respirator for organic vapor, dusts and mists to prevent inhalation.
 Contain and recover material when possible.
 If in solution, use chemically compatible spill pillows, or similar adsorbent material.
 Sweep up, seal in appropriate hazardous waste container, and hold for proper waste disposal.
 Wash spill site after material pickup is complete.
 Standard chemical precautions: Keep out of water supplies and sewers.

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SECTION 7 HANDLING AND STORAGE.....

General Handling and Storage Measures

See Section 8 Below.

Special Storage Instructions

Photosensitive (light) substance. This material is sensitive to heat and oxygen.

Store at or below -10°C in the absence of light and oxygen. Re-blanket carefully with nitrogen or argon after opening.

Store away from oxidizing materials.

Special Handling Instructions

Photosensitive substance. Minimize contact with light and heat.

Handle and store under nitrogen.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

Airborne Exposure Limits

		TWA (8H)		STEL		Ceiling Limit		Ceiling (skin)	
		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
D-Luciferin Potassium Salt 115144-35-9	OSHA PEL/VPEL	NE	NE	NE	NE	NE	NE	NE	NE
	ACGIH - TLV	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not established

Special/Other Control Measures

Odor threshold: NE

Personal Protective Equipment (PPE)

Chemical safety eyewear

Compatible chemical-resistant gloves

NIOSH/MSHA approved respirator with organic vapor, mist and dust cartridges to prevent inhalation.

Protective Clothing (e.g., lab coat)

Other Safety Equipment and Engineering Preventive Measures

Safety shower and eye wash

Mechanical exhaust

General Precautions and Handling Measures

Avoid ingestion, inhalation and contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Wash thoroughly after handling. Discard contaminated footwear.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES.....

Chemical Family: Benzothiazole carboxylic acid

Use: Analytical: used in ATP assays

Appearance, Odor, and Other Properties

pale yellow to yellow solid

Odor: none

MP: >200°C (>391°F)

FW: 318.41

bp: >300°C (>571°F)

Solubility in Water: slightly soluble

pH: Neutral

UV Absorbance: ε_{385 + 2 nm} = 17,500 0.5M Na₂CO₃, pH 11.5

VP (mmHg): <1 @ 20°C

Vapor Density: > 1 (air = 1)

% Volatiles: NA

Specific Gravity (H₂O = 1.0): 1.425

Evap. Rate: NA

Refractive Index: NA

Solubility in Organic Solvents: methanol, acetone, ethyl acetate, DMF

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SECTION 10 STABILITY AND REACTIVITY

Stability

Stable if stored dry under nitrogen in light-tight containers, in the dark at or below -10°C

Incompatibilities

Oxidizers

Light (photosensitive), heat, air sensitive—Discolors or decomposes upon exposure to light, heat, and/or air

Precautions

Avoid incompatibilities.

Hazardous Combustion or Decomposition Products

May emit carbon oxides, sulfur oxides, nitrogen oxides, potassium compounds

Hazardous Polymerization

None

SECTION 11 TOXICOLOGICAL INFORMATION

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

RTECS #

CAS #

not assigned	D-Luciferin Potassium Salt	115144-35-9
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Only selected Registry of Toxic Effects of Chemical Substances data (RTECS) is presented here. See actual entry in RTECS for complete information.

Irritation Data

	eye	skin
D-Luciferin Potassium Salt	NDA	NDA

Toxicity Data

	oral	inhalation	dermal or other
D-Luciferin Potassium Salt	NDA	NDA	NDA

Carcinogenicity

	OSHA	IARC	NTP	ACGIH	NIOSH	Notes
D-Luciferin Potassium Salt	NL	NL	NL	NL	NL	None

NL = Not Listed as a carcinogen;

Teratogenicity and Reproductive Effects

No data available.

Neurotoxicity

No data available.

Mutagenicity

No data available.

Miscellaneous

D-Luciferin Potassium Salt is used as a substrate for the luciferase enzyme for analytical monitoring of low levels of ATP.

Symptoms, Acute and Chronic Effects

See specific route responses in Section 3 **Hazards Identification** above.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity or Environmental Toxicity and Fate: D-Luciferin Potassium Salt: no data available.

Standard Chemical Precautions: Keep out of air, water, and soil

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SECTION 13 DISPOSAL CONSIDERATIONS

That which cannot be recovered or recycled, should be disposed of in accordance with all applicable Federal, State, and local environmental regulations.

RCRA waste code(s): None RCRA Hazard Class (40CFR 261): None

SECTION 14 TRANSPORT INFORMATION.....

Ship in accordance with all applicable local, State, Federal, and International transportation regulations.

The following is a summary only. Check regulations for complete information:

U. S. Department of Transportation (49CFR171.101)

Shipping Name: Not Listed
 ID Number: NA
 Hazard Class or Division: NA
 Packing Group: NA

SECTION 15 REGULATORY INFORMATION

Reviews, Standards, and Regulations

.....D-Luciferin Potassium Salt
 115144-35-9
 TSCA:.....N*
 *This chemical is for research and development use only.
 EINECS:..... N
 Number.....NL
 State Lists:..... NL
 States.....NL on CA, FL, MA
NL on MN, NJ, PA
 CA No Significant Risk Level.....NL
 OSHA Process Safety [29 CFR 1910.119]:..... NL
 Clean Air Act
 [Section 112r (40 CFR 68)]:..... NL
 TQ (lbs).....NA
 Contains Ozone Depleters (Class I or Class II).....NL
 Clean Air Act [Section 103 (40 CFR 302.4)]:.....NL
 CERCLA [Section 103 (40 CFR 302.4)]:..... NL
 RQ (lbs).....NA
 RCRA Waste Code.....NA
 SARA Title III Notification [40 CFR 302.4]:
 Section 302/304 (EHS) Ingredient [40 CFR 355.3].....NL
 TPQ (lbs).....NA
 RQ (lbs).....NA
 Section 313 Ingredient [40 CFR 372.65].....NL

Hazard Classes

Sara Title III	Acute	Chronic	Fire	Pressure	Reactivity
	Y	N	N	N	N
	Health	Flammability	Reactivity	Special Hazards	
NFPA	1	1	1	None	
HMIS	1	1	1	None	

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Risk Phrases:

Caution: The properties of this material have not been fully investigated.

Safety Phrases:

- S6 Keep under nitrogen or argon
- S7/47 Keep container tightly closed at or below -10°C in the dark.
- S22 Do not breathe dust
- S24/25 Avoid contact with skin and eyes

SECTION 16 OTHER INFORMATION

Miscellaneous

The health and toxicological hazards of this compound have not been fully investigated; therefore, this substance must be handled only by, or under close supervision of those qualified in the handling and use of potentially hazardous substances.

This MSDS was revised as follows:

Section

- Header/footer Updated version, date, and added additional catalog numbers.
- 1 Added additional catalog numbers.
- 3,9 Updated description of appearance.
- 15 Corrected ENIECS Number assignment status, and NPFA/HMIS codes.

Various sections Corrected CAS number.

Disclaimer

The above information is believed to be correct, but does not purport to be all-inclusive and shall be used only as a guide. Regis Technologies, Inc., does not guarantee said information is accurate or complete, *nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose.* Adjustment to conform with the actual conditions of usage may be required. Regis Technologies, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product, nor for the results obtained, or for incidental or consequential damage arising from the use of these data. No freedom from infringement of any patent, copyright or trademark is to be inferred.

Approved of by: MBF

This is the last page of this MSDS.