



ALDON CORPORATION

MATERIAL SAFETY DATA SHEET

1533 W. Henrietta Rd.
Avon, New York 14414
(716) 226-6177

MSDS No. FF 235-1
Effective Date April 20, 1998

SECTION V HEALTH HAZARD DATA

FF 235-1

Threshold Limited Value

ACGIH TLV-TWA 0.2 mg Arsenic per cubic meter of air. OSHA
STANDARD-Air: TWA 0.01 mg (Arsenic) per cubic meter of air.

Effects of Overexposure

May be harmful by inhalation, ingestion, or skin absorption. Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals. The toxicological properties have not been thoroughly investigated. Exercise appropriate procedures to minimize potential hazards.

Emergency and First Aid Procedures

INGESTION: If swallowed, if conscious, give one or two glasses of water to drink. Call physician immediately. Never give anything by mouth to an unconscious person. **SKIN:** Flush with water, then wash with mild soap and water. **EYES:** Flush thoroughly with water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION VI REACTIVITY DATA

Stability	Unstable	Conditions to Avoid
	Stable	X Excessive temperature and heat.

Incompatibility (Materials to Avoid)	Reducing agents.
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Hazardous Decomposition Products	Carbon dioxide, carbon monoxide, arsenic oxides, arsenic fume.
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Hazardous Polymerization		Conditions to Avoid
May Occur	Will Not Occur	Not applicable.
	X	

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled	Wear proper safety equipment (dust mask, rubber gloves, safety glasses, and proper ventilation), sweep up and place in a suitable container for disposal.
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Waste Disposal Method

Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.

Dispose of in an approved chemical landfill or contract with a licensed waste disposal service.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type)	None needed in normal laboratory handling. If dust or misty conditions prevail, work in ventilation hood or wear a NIOSH/MSHA-approved dust mask or respirator.
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Ventilation	Local Exhaust	Recommended.	Special	No.
	Mechanical (General)	Recommended.	Other	No.

Protective Gloves	Rubber.	Eye Protection	Chemical safety glasses.
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Other Protective Equipment	Lab coat, apron, eye wash station, proper gloves, ventilation hood.
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SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing	Store in a cool place. Wash thoroughly after handling.
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Keep container tightly closed when not in use.

Other Precautions	Read label on container before using. Do not wear contact lenses when working with chemicals.
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When using, do not eat, drink or smoke. Do not get in eyes, on skin, on clothing. Avoid breathing dust. Remove and wash contaminated clothing.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Revision	No. 6	Date	4/20/98	Approved	Michael Raszeja	Chemical Safety Coordinator	MR
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The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	FIREFLY LANTERN Extract
Chemical Synonyms	Part I of Firefly Bioluminescence Kit
Formula	See Section II.
Unit Size	8 bottles - approx. 16.6 mg each
C.A.S. No.	None assigned.

CHEMTREC
800-424-9300
Day 716-226-6177

NFPA
HAZARD RATING
LEAST SLIGHT MODERATE HIGH EXTREME
0 1 2 3 4

Health	2
Fire	0
Reactivity	0

HMIS *

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
* Contains 8 bottles of approx. 16.6 mg each of Firefly Lantern Extract and 8 bottles of approx. 30 mg each of Adenosine Triphosphate.		See Section V.
WARNING! MAY BE HARMFUL BY INHALATION, INGESTION OR SKIN ABSORPTION.		

SECTION III PHYSICAL DATA

Melting Point (°F)	Not applicable.	Specific Gravity (H ₂ O = 1)	Approx. 1.0
Boiling Point (°F)	Decomposes.	Percent Volatile by Volume (%)	Non-volatile.
Vapor Pressure (mm Hg)	Not applicable.	Evaporation Rate (≈1)	Not applicable.
Vapor Density (Air=1)	Not applicable.		
Solubility in Water	Complete.		
Appearance & Odor	Lyophilized powder or liquid.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Not flammable.	Flammable Limits in Air % by Volume	NA	Lower	Upper
Extinguisher Media	Use any media suitable for extinguishing supporting fire.				

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Fire or excessive heat may produce toxic decomposition products of oxides of arsenic and arsenic as fume.

* Kit contains 8 bottles each of:

- 1) Adenosine Triphosphate disodium: (CAS No. 987-65-5)
- 2) Extract Powder: Luciferin/Luciferase Lyophilized with 20mM MgSO₄ (Magnesium Sulfate): (CAS No. 7487-88-9) and 50mM Potassium Arsenate: (CAS No. 7784-41-0).

D.O.T.	NON-REGULATED.
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Approved by U.S. Department of Labor "essentially similar" to form OSHA-20



ALDON CORPORATION

MATERIAL SAFETY DATA SHEET

1533 W. Henrietta Rd.
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(716) 226-6177

MSDS No. FF 235-2
Effective Date April 20, 1998

SECTION V HEALTH HAZARD DATA

FF 235-2

Threshold Limited Value

None established.

Effects of Overexposure

INHALATION: Non-hazardous. **EYES:** No specific hazard is known. However, any material that contacts the eye may be irritating. **SKIN:** Low hazard. None expected.

Emergency and First Aid Procedures

EYES: Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. If irritation develops or persists, get medical attention. **SKIN:** Flush with soap and water. **INGESTION:** If swallowed, if conscious, give water to drink and call physician. Never give anything by mouth to an unconscious person. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION VI REACTIVITY DATA

Stability	Unstable		Conditions to Avoid	Excessive temperature and heat. Alkaline solution, acid solution.
	Stable	X		

Incompatibility (Materials to Avoid)	Strong oxidizers and alkaline materials.
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Hazardous Decomposition Products	Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide, (NO _x).
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Hazardous Polymerization		Conditions to Avoid	Not applicable.
May Occur	Will Not Occur		
	X		

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled	Sweep material onto paper. Place in a fiber carton. Dispose of in an approved incinerator. Wash spill area with soap and water.
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Waste Disposal Method	Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.
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Make up small packages in paper or other flammable materials and dispose of in an approved incinerator.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type)	None needed in normal laboratory handling. If dusty conditions prevail, work in a ventilation hood or wear a NIOSH/MSHA-approved dust mask.
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Ventilation	Local Exhaust	Not required.	Special	No.
	Mechanical (General)	Recommended.	Other	No.

Protective Gloves	Rubber.	Eye Protection	Chemical safety glasses.
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Other Protective Equipment	Safety glasses, lab coat, vented hood, proper gloves, eye wash station.
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SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing	Keep refrigerated-decomposes. Wash thoroughly after handling. Keep container tightly closed when not in use.
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Other Precautions	Read label on container before using. Do not wear contact lenses when working with chemicals.
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Avoid contact with skin and eyes.
Remove and wash contaminated clothing.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Revision	No. 6	Date	4/20/98	Approved	Michael Raszeja	Chemical Safety Coordinator	MR
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SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	ADENOSINE 5'-TRIPHOSPHATE, DISODIUM SALT	 CHEMTREC 800-424-9300 Day 716-226-6177 NFPA HAZARD RATING LEAST SLIGHT MODERATE HIGH EXTREME 0 1 2 3 4 HMIS * 0 1 2 3 4
Chemical Synonyms	Part 2 of Firefly Bioluminescence Kit	
Formula	C ₁₀ H ₁₄ N ₅ Na ₂ O ₁₃ •3H ₂ O	
Unit Size	8 bottles - approx. 30 mg each	
C.A.S. No.	987-65-5	

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Adenosine 5'-Triphosphate Disodium Salt	100%	None established.
CAUTION! DO NOT TAKE INTERNALLY.		

SECTION III PHYSICAL DATA

Melting Point (°F)	188°-190°C (370°-374°F)	Specific Gravity (H ₂ O = 1)	>1.0
Boiling Point (°F)	Decomposes.	Percent Volatile by Volume (%)	Non-volatile (NA).
Vapor Pressure (mm Hg)	Negligible as solid.	Evaporation Rate (NA = 1)	Non-volatile (NA).
Vapor Density (Air=1)	Not applicable.		
Solubility in Water	Freely soluble in water.		
Appearance & Odor	White crystalline powder; odorless.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-flammable (NA).	Flammable Limits in Air % by Volume	NA	Lower	Upper
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Extinguisher Media	Carbon dioxide (CO ₂); dry chemical (ABC); water spray.				

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Slightly, when exposed to heat or flame; may react vigorously with strong oxidizing materials.

D.O.T. NON-REGULATED.

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20