Material Safety Data Sheet

Date Updated: 06/09
Version: 1
MSDS # 11

Section 1- Product and Company Information

Product Name	Adipocyte Lipolysis Assay Kit: Free Fatty Acid Detection, Adipocyte Lipolysis : Dual Free Glycerol and Free Fatty Acid Detection kit, Serum-Plasma Fatty Acid Kits, Serum/Plasma Dual Free Glycerol and Free Fatty Acid Detection kit, Free Fatty Acid Standard
Product Number	LIP-2, LIP-3, SFA-1, SFA-5, SFA-10, GFA-1; FFA STAN
Company	Zen-Bio, Inc
Street Address	3200 Chapel Hill-Nelson Blvd., Suite 104
City, State, Zip, Country	Research Triangle Park, NC 27709 US
Technical Phone	(919) 547-0692
Emergency Phone	Toll free (866) 234-7673 or (919) 547-0692
FAX	(919) 547-0693

Section 2- Composition/Information on Ingredients

COMPOSITION/INFORMATION ON INGREDIENTS

[1]FFA Reagent A

1.	Acyl-coenzyme A synthase; Acyl-CoA ligase; EC6.2.1.3	0.53U/ml
2.	Coenzyme A	0.31mmol/L
3.	ATP (adenosine 5'-triphosphate disodium salt trihydrate)	4.3mmol/L
4.	4-aminoantipyrine; Ampyrone; 4-Amino-1,2-dihydro-1,5-dimethyl-2-phenyl-3H-pyrazol-3-one	1.5mmol/L
5.	Ascorbate oxidase, EC.1.10.3.3	2.6U/ml
6.	Sodium azide	0.06%

[2] FFA Solvent A

50mmol/L Phosphate buffer, pH 7.0

7.	Sodium azide	0.05%

[3] FFA Reagent B

8.	Acyl CoA Oxidase	12U/ml
9.	Peroxidase; EC.1.11.1.7	14U/ml

[4] FFA Solvent B

10. 3-Methyl-N-ethyl-N-beta-hydroxyethlaniline; 2-(N-Ethyl-m-toluidino)ethanol; N-Hydroxyethyl-N-ethyl-m-toluidine 2.4mmol/L

[5] FFA Standard

11.	Oleic acid (cis-9-Octadecenoic acid)	0.0283%
7.	Sodium Azide	0.05%

FORUMULA:	(1),(5);	Not available
	(2);	C21H36N7O16P3S
	(3);	C10H14N5O13P3.2Na.3H2O
	(4);	C11H13N3O
	(6),(7);	NaN3
	(8),(9);	Not available
	(10);	C11H17NO
	(11)	C18H34O2
MOLECULAR WEIGHT:	(1),(5);	Not available
	(2);	767.54
	(3);	605.19
	(4);	203.24
	(6),(7);	65.01
	(8),(9);	Not available

	(10);	179.29
	(11)	282.52
CAS NUMBER:	(1);	9013-18-7
	(2);	85-61-0
	(3);	56-65-5
	(4);	83-07-8
	(5);	9029-44-1
	(6),(7);	26628-22-8
	(8);	61116-22-1
	(9);	9003-99-0
	(10);	91-83-3
	(11)	112-80-1
TSCA INVENTORY	(1),(2),(5);	Not listed (See Section 15)
	(3),(4),(6),(7);	Listed
	(8);	Not listed (See Section 15)
	(9),(10);	Listed
EINECS No.:	(1);	232-747-5
	(2);	201-619-0
	(3);	213-579-1
	(4);	201-452-3
	(5);	232-852-6
	(6),(7);	247-852-1
	(8);	Not available
	(9);	236-668-6
	(10);	202-105-9
EC INDEX NUMBER:	(6),(7);	011-004-00-7
	(1)-(5);	Not listed
	(8)-(10);	Not listed

Section 3 Hazards Identification

SYMBOL:	[1];	T
	[2];	----
HAZARD STATEMENTS, including R-phrase:	[1];	R25 Toxic if swallowed. R32 Contact with acids liberates very toxic gas.
	[2];	----
ADDITIONAL HAZARD STATEMENTS:		May be harmful if inhaled and ingested. May cause eye and skin irritation.
PRECAUTIONARY STATEMENTS, including S-phrase:	[1],[2];	----

Section 4 First Aid Measures

GENERAL ADVICE: Wash off immediately with soap and plenty of water. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.

INHALATION: [1];[3],[4] Move victim to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, administer artificial respiration. Maintain normal body temperature with a blanket. If irritation persists, transport to a hospital immediately.

[2]; Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.

SKIN CONTACT:[1], [3],[4] Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. If irritation persists, transport to a hospital immediately.

[2]; Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. If irritation persists, consult a physician.

EYE CONTACT: [1] [3],[4] Remove any contact lenses at once. Flush eyes well with flooding amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, transport to a hospital immediately.

[2]; Remove any contact lenses at once. Flush eyes well with flooding amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a physician.

INGESTION: [1] [3],[4] Rinse mouth, give plenty of water to dilute the substance. Never give anything by mouth to an unconscious person. Transport to a hospital immediately.

[2]; Rinse mouth, give plenty of water to dilute the substance. Never give anything by mouth to an unconscious person. Consult a physician.

Section 5 Fire Fighting Measures

EXTINGUISHING MEDIA:	Carbon dioxide, dry chemical powder, foam, water
FIRE & EXPLOSION HAZARDS:	[1], [3] Toxic, irritating dust or smoke may be emitted. [2];[4] Toxic, irritating fumes or smoke may be emitted.
SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:	Firemen should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus.

Section 6 Accidental Release Measures

PERSONAL PRECAUTIONS:	Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.
ENVIRONMENTAL PRECAUTIONS:	Prevent spills from entering sewers, watercourses or low areas.
METHODS FOR CLEANING UP:	[1]; [3] Do not touch spilled material without suitable protection (See Section 8). After material is completely picked up, wash the spill site with soap and water and ventilate the area. Put all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or dispose of contaminated clothing. Sodium azide may react with copper or lead plumbing to form explosive compounds. Even though the reagents contain minute quantities of sodium azide, drains should be well flushed with large amount of water when discarding the reagents. [2]; [4] Do not touch spilled material without suitable protection (See Section 8). Take up spilled material with ashes or other absorbents. After material is completely picked up, wash the spill site with soap and water and ventilate the area. Put all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or dispose of contaminated clothing. Sodium azide may react with copper or lead plumbing to form explosive compounds. Even though the reagents contain minute quantities of sodium azide, drains should be well flushed with large amount of water when discarding the reagents.

Section 7 Handling and Storage

PRECAUTION FOR SAFE HANDLING:	Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Handle material with suitable protection.
CONDITIONS FOR SAFE STORAGE:	Store away from sunlight in a cool (2-10 °C = 35.6-50 °F) well-ventilated dry place. Keep container tightly closed.

See the package insert for further handling information.

INCOMPATIBILITIES:	Strong oxidizers, acids, heavy metals, water-reactive materials (alkali metals, etc).

Section 8 Exposure Controls/Personal Protective Equipment

ENGINEERING MEASURES: Use exhaust ventilation to keep airborne concentrations below exposure limits. Use only with adequate ventilation.

VENTILATION: Local Exhaust; Necessary, Mechanical (General); Necessary Special; Closed system is recommended.

INDIVIDUAL PROTECTION MEASURES:

Respiratory protection: NIOSH/MSHA approved respirator
Hand protection: Chemical resistant gloves
Eye protection: Safety glasses (goggles)
Skin protection: Protective clothing

CONTROL PARAMETER:

(6),(7); OSHA Final Limits: None established
ACGIH TLV(s): Ceiling = 0.29mg/m3
(1)-(5); OSHA Final Limits: None established
ACGIH TLV(s): None established

Section 9 Physical and Chemical Properties

APPEARANCE:	[1]; [3]	White lyophilized powder
	[2];[4];[5]	Colorless clear liquid
ODOUR:	[1],[2]; [3],[4];[5]	Odorless
pH:	[2]; [4]; (11)	7.0; 4.0;6.5
	[1]; [3],	Not available
MELTING POINT:	[1],[2]; [3],[4];	Not available
INITIAL BOILING POINT:	[1],[2] [3],[4];;	Not available
FLASH POINT:	[1],[2]; [3],[4];	Not available
FLAMMABILITY (solid, gas):	[1],[2]; [3],[4];	Not available
EXPLOSIVE LIMITS:	[1],[2]; [3],[4];	Not available
VAPOR PRESSURE:	[1],[2]; [3],[4];	Not available
SPECIFIC GRAVITY:	[2]; [4]; (11)	1.0039; 1.0;1.0
	[1]; [3],	Not available
SOLUBILITY IN;		
WATER:	[1]; [3],	Soluble
	[2]; [4];	Miscible
PARTITION COEFFICIENT:	[1],[2]; [3],[4];	Not available
DECOMPOSITION TEMPERATURE:	[1],[2]; [3],[4];	Not available

Section 10 Stability and Reactivity

CHEMICAL STABILITY:	Will not occur.
CONDITIONS TO AVOID:	Sunlight, heat
INCOMPATIBILE MATERIALS:	Strong oxidizers, acids, heavy metals, water-reactive materials (alkali metals, etc.)
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, nitrogen oxides, phosphor oxides, and sodium compounds may be formed.

Section 11 Toxicological Information

ACUTE TOXICITY (oral/dermal/inhalation):	[1],[2];	Not available as the mixture
	(3);	LD50(orl,rat): >2gm/kg (NIIRDN Drugs in Japan 6,20,1982)
		LD50(orl,mouse): >2gm/kg (NIIRDN Drugs in Japan 6,20,1982)
	(4);	LD50(orl,rat): 1700mg/kg (BCFAAI 117,638,1978)
		LD50(orl,mouse): 800mg/kg (CCCCAK 47,636,1982)
	(6),(7);	LD50(orl,rat): 27mg/kg (FMCHA2-,C32,1991)
		TDLo(orl,man): 129μg/kg (YAKUD5 40,1407,1998)
		LC50(ihl,rat): 37 mg/m3 (STGNBT -,173,1999)
		LD50(skin,rabbit): 20 mg/kg(FMCHA2 -,C32,1991)
	(11)	LD50(orl, rat):74 gm/kg (UCDS** 11/29/1963)
SKIN CORROSION/IRRITATION:	[1],[2]; [3];[4]; [5]	Not available as the mixture and components

EYE DAMAGE/EYE IRRITATION: (11) Eye; rabbit;100mg; Mild (JACTDZ 6(3),321,1987)
RESPIRATORY OR SKIN SENSITIZATION:
GERM CELL MUTAGENICITY: (4); Mutation in microorganisms; S.typhimurium; 5μmol/plate(MUREAV 206,317,1988)
(6),(7); Mutation in microorganisms; S. typhimurium; 30μg/plate(ENMUDM 9(Suppl 9),1,1987)
TOXIC TO REPRODUCTION: [1],[2]; [3];[4] Not available as the mixture and components
STOST-SINGLE EXPOSURE:
STOST-REPEATED EXPOSURE:
ASPIRATION TOXICITY:
CARCINOGENICITY: (6),(7); TDLo(orl,rat): 2730mg/kg/78W-C(JJIND867,75,1981)

ADDITIONAL INFORMATION;
NTP: Not listed
IARC: Not listed
OSHA: Not listed
ACGIH: (6),(7); Not Classifiable as a Human Carcinogen (A4)
(4); EPA GENETOX PROGRAM 1986, Negative: Histidine reversion-Ames test
(6),(7); EPA GENETOX PROGRAM 1988, Positive: S cerevisiae gene conversion

Section 12 Ecological Information

ECOTOXICITY: Not available
PERSISTENCE AND DEGRADABILITY: Not available
BIOACCUMULATION POTENTIAL: Not available
MOBILITY IN SOIL: Not available
OTHER ADVERSE EFFECTS: (6),(7); WGK;2

Section 13 Disposal Considerations

[1],[2]; [3];[4]
Sodium azide may react with copper or lead plumbing to form explosive compounds. Even though the reagents contain minute quantities of sodium azide, drains should be well flushed with large amount of water when discarding the reagents. Incinerate and dispose of waste in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules).\

(6),(7); USEPA(RCRA) hazardous waste No.: P105

Section 14 Transport Information

MARINE POLLUTANT: no entry data
[1],[2];[3];[4] IATA: Not Restricted.
MARINE POLLUTANT: no entry data
DOT (Department of Transportation): Not a Hazardous Material for DOT shipping.

Section 15 Regulatory Information

US REGULATIONS;
(1)-(5); EPA: CERCLA RQ=Not listed
EPCRA TPQ=Not listed
OSHA: TQ=Not listed
(6),(7); TSCA CHIPs, NIOSH Recommend. Subst., RCRA Haz., CERCLA Haz. Subst., SARA III/302 Extre. Haz. Subst., SARA III/313 Tox. Chem., NTP Test. Prog., DOT Haz. Mat., DOT Haz. Sub. And Rep. Quant., Mass. Subst. List, New Jers. RTK Haz. Subst. List, Penn. Haz. Subst. List, Canad. WHMIS IDL 1% conc.
EPA: CERCLA RA=1000 lb
SARA RQ=1000 lb
EPCRA TPQ=500 lb
EPCRA SECTION 313 de minimis concentration is 1.0%.
(8)-(10); EPA: CERCLA RQ=Not listed
EPCRA TPQ=Not listed

OSHA: TQ=Not listed

TSCA: Use of this product must be restricted to research or analysis for the development of a product in accordance with the Act.

Section 16 Other Information

No specific notes

The above information is believed to be correct to be the best of our knowledge and information but does not purport to be all inclusive and shall be used only as a guide. This product is intended to be used by expert persons having chemical knowledge and skill, at their own discretion and risk and Wako shall not be held liable for any damage resulting from handling or from contact with the above material.