

Section 1 – Product and Company Information

Product Name:	ADAPT 3D Partial Delipidation
Product Form:	Mixture - This combined safety data sheet provides information for Product Code (B672 and B676)
Company:	Leinco Technologies, Inc 410 Axminister Drive St. Louis, MO 63026 USA Phone: 636-230-9477 Fax: 636-527-5545
Emergency Telephone:	636-230-9477 800-538-1145
Recommended Use:	For In Vitro Diagnostic Use only

Section 2 – Hazardous Identification

2.1 Classification of the substance or mixture

Flammable liquids (H225)	:Category 2	Danger
Acute toxicity, Oral (H302)	:Category 4	Warning
Eye irritation (H319)	:Category 2A	Warning
Carcinogenicity (H351)	:Category 2	Warning
Specific target organ toxicity single exposure (Category 3), Respiratory system, Central nervous system, (H335, H336)	:Category 3	Warning

2.2 GHS Label elements, including precautionary statements

Pictogram(s):



Signal Word: Danger

Hazard Statements	
H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.

H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.

Precautionary Statements	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing mist or vapors.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS: May form explosive peroxides.

Section 3 – Composition/ Information on Ingredients

CAS No/Description.: 109-99-9/ Tetrahydrofuran
6920-22-5/ 1,2-Hexanediol

Chemical Formula: Not applicable to mixtures
Trade secret formulation

Section 4 – First Aid Measures

General: If exposed or concerned, get medical attention/advice. Show this safety data sheet to the attending doctor. Wash contaminated clothes prior to reuse. Never give anything to an unconscious person.

Inhalation Exposure: After inhalation: fresh air. Call in physician (for Tetrahydrofuran). After inhalation: fresh air (for 1,2-Hexanediol).

Oral Exposure: Immediately make victim drink water (two glasses at most). Consult a physician.

Dermal Exposure: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician (for Tetrahydrofuran). Take off immediately all contaminated clothing. Rinse skin with water/ shower (for 1,2-Hexanediol).

Eye Exposure: Rinse out with plenty of water. Call an ophthalmologist. Remove contact lenses. (for Tetrahydrofuran). Rinse out with plenty of water. Call an ophthalmologist. Remove contact lenses (for 1,2-Hexanediol).

Important symptoms and effect

General Symptoms: The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention needed: No data available.

Section 5 – Fire Fighting Measures

	1,2-Hexanediol	Tetrahydrofuran
Suitable extinguishing media:		Carbon dioxide (CO ₂) Foam Dry powder
Unsuitable extinguishing media:	For this substance/mixture no limitations of extinguishing agents are given.	For this substance/mixture no limitations of extinguishing agents are given.
Special hazards arising from the substance or mixture	Carbon oxides	Carbon oxides
	Combustible liquid.	Combustible.
	Vapors are heavier than air and may	Pay attention to flashback.

	spread along floors.	
	Forms explosive mixtures with air on intense heating.	Vapors are heavier than air and may spread along floors.
		Development of hazardous combustion gases or vapours possible in the event of fire.
		Forms explosive mixtures with air at ambient temperatures.
Advice for firefighters:	In the event of fire, wear self-contained breathing apparatus.	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Further information:	Prevent fire extinguishing water from contaminating surface water or the ground water system.	Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6 – Accidental Release Measures

	1,2-Hexanediol	Tetrahydrofuran
Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.	
Environmental precautions	Do not let product enter drains.	Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning up	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.	
Reference to other sections	For disposal see section 13.	

Section 7 – Handling and Storage

	1,2-Hexanediol	Tetrahydrofuran
Advice on safe handling	For precautions see section 2.2.	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion		Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
Hygiene measures		Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
Conditions for safe storage, including any incompatibilities		
Storage conditions	Tightly closed.	Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Test for peroxide formation periodically and before distillation.
Storage class	Storage class (TRGS 510): 10: Combustible liquids	Storage class (TRGS 510): 3: Flammable liquids
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated	

Section 8 – Exposure Controls/Personal Protection

Component	CAS-No.	Value	Control Parameters	Basis
Tetrahydrofuran	109-99-9	TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		STEL	100 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		ST	250 ppm 735 mg/m ³	USA. NIOSH Recommended Exposure Limits
		TWA	200 ppm 590 mg/m ³	USA. NIOSH Recommended Exposure Limits
		TWA	200 ppm 590 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		PEL	200 ppm 590 mg/m ³	California permissible exposure limits for chemical

				contaminants (Title 8, Article 107)
		STEL	250 ppm 735 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

Tetrahydrofuran - Biological occupational exposure limits					
Component	CAS-No.	Parameters	Value	Biological Specimen	Basis
Tetrahydrofuran	109-99-9	Tetrahydrofuran	2 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

Tetrahydrofuran - Derived No Effect Level (DNEL)			
Application Area	Routes of Exposure	Health effect	Value
Workers	Skin contact	Long-term systemic effects	25mg/kg BW/d
Consumers	Skin contact	Long-term systemic effects	15mg/kg BW/d
Workers	Inhalation	Long-term local effects	150 mg/m3
Workers	Inhalation	Long-term systemic effects	150 mg/m3
Consumers	Inhalation	Long-term systemic effects	62 mg/m3
Consumers	Inhalation	Acute local effects	150 mg/m3
Consumers	Inhalation	Acute systemic effects	150 mg/m3

Tetrahydrofuran - Predicted No Effect Concentration (PNEC)	
Soil	2.13 mg/kg
Sea water	0.432 mg/l
Fresh water	4.32 mg/l
Sea sediment	2.33 mg/kg
Fresh water sediment	23.3 mg/kg
Onsite sewage treatment plant	4.6 mg/l

	1,2-Hexanediol	Tetrahydrofuran
Control parameters		
Ingredients with workplace control parameters	Contains no substances with occupational exposure limit values.	
Appropriate engineering controls	Change contaminated clothing. Wash hands after working with substance.	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
Eye/face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.	
Skin protection		This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
		Splash contact
		Material: butyl-rubber
		Minimum layer thickness: 0.7 mm
		Break through time: 10 min
		Material tested: Butoject® (KCL 898)
Body Protection	Protective clothing	Flame retardant antistatic protective clothing.
Respiratory protection	Recommended Filter type: Filter type ABEK User must ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.	Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds. User must ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Control of environmental exposure	Do not let product enter drains.	Do not let product enter drains. Risk of explosion.

Section 9 – Physical/Chemical Properties

	1,2-Hexanediol	Tetrahydrofuran
Appearance	Form: liquid	Form: liquid
	Color: light yellow	
Odor	No data available	No data available
Odor Threshold	No data available	No data available
pH	No data available	ca.7 - 8
Melting point/freezing point	Solidification / Setting point: 2 °C (36 °F)	Melting point: -108.44 °C (-163.19 °F) - (ECHA)
Initial boiling point and boiling range	223 - 224 °C 433 - 435 °F - lit.	65 °C 149 °F at 1,013.25 hPa - (ECHA)
Flash point	122 °C (252 °F) - closed cup	-21.2 °C (-6.2 °F) - closed cup - DIN 51755 Part 1
Evaporation rate	No data available	No data available
Flammability (solid, gas)	No data available	No data available
Upper/lower flammability or explosive limits	No data available	Upper explosion limit: 12.4 %(V) - (THF)
		Lower explosion limit: 1.5 %(V)
Vapor pressure	0.576 hPa at 25 °C (77 °F) 0.606 hPa at 20 °C(68 °F)	170 hPa at 20 °C (68 °F) - (THF)
Vapor density	No data available	No data available
Density	0.951 g/cm ³ at 25 °C (77 °F) - lit.	0.89 g/cm ³ at 20 °C (68 °F)
Relative density	No data available	No data available
Water solubility	completely miscible	Miscible
Partition coefficient:n-octanol/water	No data available	log Pow: 0.45 at 25 °C (77 °F) - Bioaccumulation is not expected.
Autoignition temperature	350 °C (662 °F)	215 °C (419 °F) at 1,013 hPa - DIN 51794
Decomposition temperature	No data available	No data available
Viscosity	87.8 mm ² /s at 20 °C (68 °F) - 27.2 mm ² /s at 40 °C (104 °F) -	No data available
Explosive properties	No data available	Not classified as explosive.
Oxidizing properties	No data available	none
Other Safety Information	No data available	No data available

Section 10 – Stability and Reactivity

	1,2-Hexanediol	Tetrahydrofuran
Reactivity	Forms explosive mixtures with air on intense heating.	Formation of peroxides possible.
	A range from approx. 15 Kelvin below the flash point is to be rated as critical.	Vapors may form explosive mixture with air.
Chemical stability		Sensitivity to light
	The product is chemically stable under standard ambient conditions (room temperature) .	Sensitive to air.
		The product is chemically stable under standard ambient conditions (room temperature) .
		Stable under recommended storage conditions.
		Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.
Possibility of hazardous reactions	Violent reactions possible with: Strong oxidizing agents	Vapors may form explosive mixture with air.
Conditions to avoid	Strong heating.	Distillation (Risk of explosion).
		Warming.
		Moisture.
Incompatible materials	Strong oxidizing agents, Strong bases	No data available
Hazardous decomposition products	In the event of fire: see section 5	Peroxides
		In the event of fire: see section 5

Section 11 – Toxicological Information

	1,2-Hexanediol	Tetrahydrofuran
Acute toxicity	LD50 Oral - Rat - male - 5,339 - 6,470 mg/kg (OECD Test Guideline 401)	LD50 Oral - Rat - male and female - 1,650 mg/kg
	LD50 Oral - Rat - female - 6,166 mg/kg (OECD Test Guideline 401)	Remarks: (ECHA)
	LC50 Inhalation - Rat - > 7,015 mg/l (OECD Test Guideline 403)	Symptoms: Irritation of mucous membranes

	LD50 Dermal Dermal - Rabbit - > 2,000 mg/kg (OECD Test Guideline 402)	LC50 Inhalation - Rat - male and female - 6 h - > 14.7 mg/l - vapor (US-EPA)
		LD50 Dermal - Rat - male and female - > 2,000 mg/kg (OECD Test Guideline 402)
Skin corrosion/irritation	Skin - Rat	Skin - Rabbit
	Result: No skin irritation (OECD Test Guideline 404)	Result: No skin irritation - 72 h (Draize Test)
		Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.
Serious eye damage/eye irritation	Eyes - Rabbit	Eyes - Rabbit
	Result: Irritating to eyes.	Result: Causes serious eye irritation. (IUCLID)
		Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Respiratory or skin sensitization	No data available	Local lymph node assay (LLNA) - Mouse
		Result: negative (OECD Test Guideline 429)
Germ cell mutagenicity	Test Type: In vitro mammalian cell gene mutation test	Test Type: Ames test
	Test system: Chinese hamster lung cells	Test system: S. typhimurium
	Metabolic activation: with and without metabolic activation	Metabolic activation: with and without metabolic activation
	Method: OECD Test Guideline 476	Method: OECD Test Guideline 471
	Remarks: negative	Result: negative
	Test Type: Chromosome aberration test in vitro	Test Type: In vitro mammalian cell gene mutation test
	Test system: Chinese hamster ovary cells	Test system: Chinese hamster ovary cells
	Metabolic activation: with and without metabolic activation	Metabolic activation: with and without metabolic activation
	Method: OECD Test Guideline 473	Method: OECD Test Guideline 476
	Remarks: negative	Result: negative
	Test Type: reverse mutation assay	Test Type: Chromosome aberration test in vitro
	Test system: S. typhimurium	Test system: Chinese hamster ovary cells
	Metabolic activation: with and without metabolic activation	Metabolic activation: with and without metabolic activation
	Method: Mutagenicity (Escherichia coli - reverse mutation assay)	Method: OECD Test Guideline 473

	Remarks: negative	Result: negative
		Test Type: Micronucleus test
		Species: Mouse
		Cell type: Red blood cells (erythrocytes)
		Application Route: inhalation (vapor)
		Method: OECD Test Guideline 474
		Result: negative
Carcinogenicity		Suspected of causing cancer.
IARC:	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.	2B - Group 2B: Possibly carcinogenic to humans (Tetrahydrofuran)
NTP:	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.	No ingredient 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.	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	No data available	No data available
Specific target organ toxicity - single exposure	No data available	Inhalation - May cause respiratory irritation. - Central nervous system Inhalation - May cause respiratory irritation. - Central nervous system Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure	No data available	No data available
Aspiration hazard	No data available	No data available
Additional Information		
Repeated dose toxicity	Repeated dose toxicity - Rat - Oral - NOAEL (No observed adverse effect level) - 500 mg/kg	Repeated dose toxicity - Rat - male and female - Oral - 4 Weeks RTECS: LU5950000 irritant effects, Cough, Shortness of breath, narcosis, somnolence To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
	Repeated dose toxicity - Rat - Dermal - NOAEL (No observed adverse effect level) - 700 mg/kg	In high doses: somnolence, narcosis

	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting	Other dangerous properties can not be excluded. This substance should be handled with particular care.
		Stomach - Irregularities - Based on Human Evidence

Section 12 – Ecological Information

	1,2-Hexanediol	Tetrahydrofuran
Toxicity		
Toxicity to fish		flow-through test LC50 - Pimephales promelas (fathead minnow) - 2,160 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates		static test EC50 - Daphnia magna (Water flea) - 3,485 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to fish (Chronic toxicity)		flow-through test NOEC - Pimephales promelas (fathead minnow) - flow-through test NOEC - Pimephales promelas (fathead minnow) - 216 mg/l - 33 d Remarks: (ECHA)
Toxicity to bacteria	No data available	
Persistence and degradability		
Biodegradability	Result: 89.3 % - Readily biodegradable.	aerobic Biochemical oxygen demand - Exposure time 28 d. Result: 39 % - Not readily biodegradable. (OECD Test Guideline 301D)
Bioaccumulative potential	No data available	
Mobility in soil	No data available	
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.	
Endocrine disrupting properties	No data available	
Other adverse effects	No data available	

Section 13-Disposal Conditions

	1,2-Hexanediol	Tetrahydrofuran
Waste treatment methods	Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.	

Section 14-Transport Information

	1,2-Hexanediol	Tetrahydrofuran
DOT (US)	Not dangerous goods	UN number: 2056 Class: 3 Packing group: II Proper shipping name: Tetrahydrofuran Reportable Quantity (RQ): 1000 lbs Poison Inhalation Hazard: No
IMDG	Not dangerous goods	UN number: 2056 Class: 3 Packing group: II EMS-No: F-E, S-D Proper shipping name: TETRAHYDROFURAN
IATA	Not dangerous goods	UN number: 2056 Class: 3 Packing group: II Proper shipping name: Tetrahydrofuran
Environmental hazards		
Special precautions for user		
Further information	Not dangerous goods	

Section 15-Regulatory Information

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Tetrahydrofuran	109-99-9	1000	1000

SARA 311/312 Hazards

- **Tetrahydrofuran:** Fire Hazard, Acute Health Hazard, Chronic Health Hazard.
- **1,2-Hexanediol:** Acute Health Hazard.

Clean Water Act

- This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.
- This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311,

Table 117.3.

- This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307.
- This product does not contain any priority pollutants related to the U.S. Clean Water Act.

US State Regulations

Massachusetts Right To Know

- **Tetrahydrofuran:** 109-99-9.
- **1,2-Hexanediol:** No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

- **Tetrahydrofuran:** 109-99-9.

Maine Chemicals of High Concern

- **Tetrahydrofuran:** Product does not contain any listed chemicals.
- **1,2-Hexanediol:** Product does not contain any listed chemicals.

Vermont Chemicals of High Concern

- **Tetrahydrofuran:** Product does not contain any listed chemicals.
- **1,2-Hexanediol:** Product does not contain any listed chemicals.

Washington Chemicals of High Concern

- **Tetrahydrofuran:** Product does not contain any listed chemicals.
- **1,2-Hexanediol:** Product does not contain any listed chemicals.

California Prop. 65

- **Tetrahydrofuran:** WARNING: This product can expose you to chemicals including Tetrahydrofuran, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

TSCA Inventory

- All substances listed as active on the TSCA inventory.
- No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

Section 16-Other Information

Indication of changes:

New SDS created September 2025

Disclaimer: For Research Use Only. Not for drug, household, therapeutic, diagnostic or other uses.

Warranty: 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. Leinco Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. Copyright 2012 Leinco Technologies, Inc. License granted to make unlimited paper copies for internal use only.