MATERIAL SAFETY DATA SHEET
LPS® ZeroTri®

Revision Date: January 12, 2012 **Supersedes:** August 17, 2010

Section 1 • Product and Company Identification

Product Name: LPS® ZeroTri®

Part Number(s): 03520 (aerosol), 03528, 03505, 03555, C03520 (aerosol), C03528, C03505, C03555

Chemical Name: Acetone / Aliphatic Hydrocarbon Mixture

Product Use: An industrial degreaser designed to remove oil, grease, wax, moisture, dirt or other contaminants from parts and equipments.

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Website: http://www.lpslabs.com

Section 2 • Hazards Identification

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Emergency Overview:

Aerosol: DANGER: Extremely flammable. Eye irritant. Vapor harmful. Contents under pressure. Harmful or fatal if swallowed.

Bulk: DANGER: Extremely flammable. Eye irritant. Vapor harmful. Harmful or fatal if swallowed.

Primary route(s) of entry: Skin and eye contact. Inhalation.

Potential Acute Health Effects:

Eyes: Irritating to eyes.

Skin: Repeated exposure may cause skin dryness or cracking.

Inhalation: Excessive inhalation of vapors can cause irritation of the respiratory tract, nausea, dizziness or headache.

Ingestion: Product has a low order of acute oral toxicity, but ingestion of large quantities may cause nausea, vomiting, and gastrointestinal irritation. May cause injury if aspirated into lungs.

Potential Chronic Health Effects:

Carcinogenic Effects: **NTP:** No **IARC:** No **OSHA:** No **ACGIH:** No

Mutagenic Effects: None

Teratogenic Effects: None

Target Organs: None

Medical conditions aggravated by exposure:
Persons with pre-existing central nervous system (CNS) disease, neurological conditions, skin disorders, chronic respiratory diseases, or impaired liver or kidney function should avoid exposure.

Signs and Symptoms
Stinging in eyes. Repeated or prolonged skin contact can cause redness, irritation, and scaling of the skin (dermatitis). Breathing of high vapor concentrations may cause headaches, stupor, irritation of throat and eyes, and kidney effects.

Section 3 • Composition / Information on Ingredients

Component	CASRN	Weight Percent
Acetone	67-64-1	25 - 40%
n-Heptane	142-82-5	25 - 40%
Methylcyclohexane	108-87-2	15 - 30%
Pentyl acetate	628-63-7	1 - 5%
Carbon Dioxide (aerosol only)	124-38-9	1 - 5%

Section 4 • First Aid Measures

Eyes: Check for and remove contact lenses. If irritation or redness develops, flush eyes with cool, clean, low pressure water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye and eyelid tissue. DO NOT use eye ointment. Seek medical attention immediately.

Skin: Remove contaminated shoes and clothing. Clean affected area thoroughly with mild soap and water. DO NOT use ointments. Seek medical attention if irritation persists.

Inhalation: Immediately move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). If breathing is difficult, seek medical attention immediately.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. DO NOT leave victim unattended. Seek medical attention immediately.

Section 5 • Fire Fighting Measures

Products of Combustion: Carbon monoxide and carbon dioxide.

General Fire Hazards: Do not use on energized equipment. High heat will cause product to boil, evolving vapor that could cause explosive rupture of closed containers.

Firefighting media: SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use CO2, water spray, fog or foam. Cool containing vessels with water jet in order to prevent pressure build-up, auto-ignition or explosions.

Sensitivity to Impact: None **Sensitivity to Static Discharge:** Yes

Protection Clothing (Fire): Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles.

Special Remarks on Explosion Hazards:
Aerosols may explode upon heating, spread fire and overcome sprinkler systems.

Section 6 • Accidental Release Measures

Containment Procedures:

Small Spill and Leak: Eliminate ignition sources. Absorb with an inert material and dispose of properly.

Large Spill and Leak: Eliminate ignition sources. Secure the area and control access. Dike far ahead of a liquid spill to ensure complete collection. Pick up free liquid for disposal using absorbent pads, sand, or other inert non-combustible absorbent materials. Place into appropriate waste containers for later disposal.

Clean-Up Procedures: Recover free product and place in a suitable container for disposal.

Evacuation Procedures: Ventilate area of leak or spill. Keep unnecessary and unprotected people away.

Special Procedures: Remove all sources of ignition. Ventilate area. Wear personal protective equipment during cleanup.

Section 7 • Handling and Storage

Handling: DO NOT spray into or around ignition sources. DO NOT allow material to come in contact with eyes or skin. Wear appropriate protective equipment during handling. Keep container closed. Avoid breathing vapors or mists. Use only with adequate ventilation. Wash thoroughly after handling.

Storage: Keep container in a cool, well-ventilated area. Avoid all sources of ignition (spark or flame). Store between 40°F and 120°F (4.4°C and 49°C).

Precautions to be taken in handling and storage:
Store aerosols as Level 3 Aerosol (NFPA 30B). Store all materials in a dry, well-ventilated area. Avoid breathing vapors. Ground and bond containers before transferring materials.

Section 8 • Exposure Controls / Personal Protection

Exposure Guidelines:

Component	CASRN	OSHA	ACGIH	NIOSH	Supplier
Acetone	67-64-1	1000 ppm PEL	500 ppm TLV 750 ppm STEL	250 ppm TWA	None reported
n-Heptane	142-82-5	500 ppm PEL	400 ppm TLV 500 ppm STEL	85 ppm TWA	500 ppm STEL
Methylcyclohexane	108-87-2	500 ppm PEL	400 ppm TLV	400 ppm TWA	None reported
Pentyl acetate	628-63-7	100 ppm PEL	50 ppm TLV 100 ppm STEL	100 ppm TWA	None reported
Carbon Dioxide (aerosol only)	124-38-9	5000 ppm PEL	5000 ppm TLV 30000 ppm STEL	5000 ppm TWA 30000 ppm STEL	None reported

Engineering Controls: Provide general and/or local exhaust ventilation to keep exposures below the exposure guidelines listed above.

Personal protective equipment

Eye protection: Safety glasses with side shields conforming to appropriate regulations. Eye wash fountain and emergency shower facilities are recommended.

Hand protection: Use chemically resistant protective gloves. Please observe the instructions regarding permeability and breakthrough time that are provided by the supplier of the gloves. Take into consideration the specific local conditions under which the product is used, such as the danger of the cuts, abrasion and the contact time.

Respiratory protection: Typical use of this product under normal conditions does not require the use of respiratory protection. If airborne concentrations are above the applicable exposure limits (listed above), use NIOSH approved respiratory protection (i.e. organic vapor cartridge).

General Hygiene Considerations: Wash thoroughly after handling. Have eye-wash facilities immediately available.

Section 9 • Physical and Chemical Properties

Appearance:	Liquid	**Color:**	Clear, colorless
Odor:	Ether-like / Fruity	**Evaporation Rate:**	> 1 (BuAc = 1)
Solubility Description:	35% by weight	**Flash Point:**	-17ºC (+1.4ºF) - dispensed liquid
Boiling Point:	> 56°C (133ºF)	**Flash Point Method:**	Tag-Closed Cup
Specific Gravity (H2O=1):	0.74 - 0.76 @ 20°C	**Decomposition Temperature:**	Not established
Vapor Density (air = 1):	~3	**Auto ignition temperature:**	Not established
Vapor Pressure:	> 75 mm Hg @ 20ºC	**Flammable limits (estimated):**	LOWER: 1.2% UPPER: 12.8%
Rule 1171 PPc:	Not established	**Partition Coefficient (octanol/water):**	< 1
V.O.C. Content:	Aerosol: 62.4% per State & Federal Consumer Product Regulations; 470 g/L per SCAQMD Rule 102 Bulk: 65.0% per State & Federal Consumer Product Regulations; 489 g/L per SCAQMD Rule 102	**Odor Threshold:**	Not established
Melting Point:	Not established	**Viscosity:**	Not established
pH:	Not applicable	**Volatiles:**	100%
Heat of combustion:	Aerosol: > 30 kJ/g Bulk: > 30 kJ/g		

Section 10 • Stability and Reactivity

Chemical Stability:	Product is stable under recommended storage conditions.
Conditions to Avoid:	Keep away from heat and ignition sources.
Incompatibility:	Reactive or incompatible with oxidizing agents.
Hazardous Decomposition:	These products are carbon oxides (CO, CO2).
Hazardous Polymerization:	Will not occur.

Section 11 • Toxicological Information

Acute and Chronic Toxicity

A: General Product Information
An acute toxicity study of this product has not been conducted. Information given in this section relates only to individual constituents contained in this preparation.

B: Component Analysis

Component	CASRN	LC-50	LD-50
Acetone	67-64-1	16000 ppm / rat / 4 hr*	5800 mg/kg / oral / rat* 20000 mg/kg / dermal / rabbit*
n-Heptane	142-82-5	103 g/m3 / rat / 4 hr	222 mg/kg / intravenous / mouse
Methylcyclohexane	108-87-2	15227 ppm / rabbit / 1 hr	> 3200 mg/kg / oral / rat > 86700 mg/kg / dermal / rabbit / 24 hr**
Pentyl acetate	628-63-7	> 3000 ppm / rat / 6 hr	> 1600 mg/kg / rat
Carbon Dioxide (aerosol only)	124-38-9	470000 ppm / rat / 30 minutes	Not appropriate

* Supplier Data
** RTECS LD50 not reported, this is a Lethal Dose (LD) value.

Section 12 • Ecological Information

Mobility: Volatile. May partially absorb to sediment. **Persistence / Degradability:** Partially biodegradable

Bioaccumulative potential: No bioaccumulation potential **Other adverse effects:** None known

Ecological studies have not been conducted for this product. The following information is available for component(s) of this product.

Ecotoxicity

Effects on Organisms	Component	CASRN	Test	Species	Results
Acute Toxicity on Fishes	Acetone	67-64-1	96-hr LC50	Alburnus Alburnus	11,000 mg/L
	Pentyl acetate	628-63-7	96-hr LC50	Gambusia Affinis	65,000 µg/L
Acute Toxicity on Daphnia	Acetone	67-64-1	48-hr EC50	Daphnia Magna	12,700 mg/L
	Methylcyclohexane	108-87-2	48-hr EC50	Daphnia Magna	15 mmol/m3
	Pentyl acetate	628-63-7	LC50	Daphnia Magna	210 mg/L
Bacterial Inhibition	No data available				
Growth inhibition of algae					
Bioaccumulation in fish					

* Supplier Data

Section 13 • Disposal Considerations

Waste Status: Aerosol cans, if depressurized and emptied to less than 1 inch (2.54 cm) of fluid contents, are classified as non-hazardous waste under 40 CFR 261.7 (U.S.). If disposed of in its received form, the aerosol product carries the waste codes D001 and D003 (U.S.).

Disposal: Waste must be disposed of in accordance with any and all applicable environmental control rules and/or regulations.

Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information inaccurate, incomplete, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive than federal laws and regulations.

Section 14 • Transport Information

Aerosol

D.O.T. Ground	**Shipping Name:**	Consumer Commodity	**UN No.:**	NA
	Hazard Class:	ORM-D	**Technical Name:**	NA
	Subclass:	NA	**Hazard Label:**	ORM-D Already on box
	Packing Group:	NA		
Road/Rail - ADR/RID	**UN No.:**	1950	**ADR Class:**	2
	Packing Group:	NA	**Classification Code:**	5F
	Name and description:	AEROSOLS, flammable	**Hazard ID No.:**	NA
	Labeling:	2.1	**Technical Name:**	NA
IMDG-IMO	**UN No.:**	1950	**Class:**	2
	Shipping Name:	Aerosols	**Subsidiary Risk:**	2.1
	Labeling:	NA	**Packing Group:**	NA
	Packing Instructions:	NA	**EmS:**	F-D, S-U
	Marine pollutant:	No	**Technical Name:**	NA
IATA - ICAO:	**UN No.:**	1950	**Class:**	2.1
	Shipping Name:	Aerosols, flammable	**Subclass:**	NA
	Packing Instructions:	203, Y203 (Ltd. Qty.)	**Packing Group:**	NA
	Labeling:	Flammable Gas	**Technical Name:**	NA

Bulk

D.O.T. Ground	**Shipping Name:**	Flammable Liquid, n.o.s.	**UN No.:**	1993
	Hazard Class:	3	**Technical Name:**	Heptanes, Acetone
	Subclass:	NA	**Hazard Label:**	Flammable Liquid
	Packing Group:	NA		
Road/Rail - ADR/RID	**UN No.:**	1993	**ADR Class:**	3
	Packing Group:	II	**Classification Code:**	F1
	Name and description:	Flammable liquid, n.o.s.	**Hazard ID No.:**	33
	Labeling:	3	**Technical Name:**	Heptanes, Acetone
IMDG-IMO	**UN No.:**	1993	**Class:**	3
	Shipping Name:	Flammable liquid, n.o.s.	**Subsidiary Risk:**	NA
	Labeling:	3	**Packing Group:**	II
	Packing Instructions:	P001	**EmS:**	F-E, S-E
	Marine pollutant:	No	**Technical Name:**	Heptanes, Acetone
IATA - ICAO:	**UN No.:**	1993	**Class:**	3
	Shipping Name:	Flammable liquid, n.o.s.	**Subclass:**	NA
	Packing Instructions:	Y341 (Ltd. Qty.), 353, 364 (CAO)	**Packing Group:**	II
	Labeling:	Flammable Liquid	**Technical Name:**	Heptanes, Acetone

*Note: For air shipment only

1 gallon (3.78 liter) containers shipped in case quantity (4 to a case), must be shipped via "CARGO AIRCRAFT ONLY" (CAO).

5 gallon (18.93 liter) containers must be shipped via "CARGO AIRCRAFT ONLY" (CAO).
55 gallon (208 liter) drums CANNOT be shipped by air.

The preceding information is subject to change and must be verified prior to shipment. It is the responsibility of anyone offering hazardous materials for shipment to ensure compliance with all applicable regulations.

Section 15 • Regulatory Information

U.S. Federal Regulations

RCRA Hazardous Waste No.: D001, D003 (aerosols only)

Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA):
Acetone 67-64-1 5000 lbs
Pentyl Acetate 628-63-7 5000 lbs.

Toxic Substances Control Act (TSCA):
All components of this product are TSCA inventory listed and/or are exempt.

Superfund Amendments and Reauthorization Act (SARA) Title III SARA Section 311/312 (40 CFR 370) Hazard Categories:
Sudden Release of Pressure, Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372):
No individual section 313 component is present at or above 1%.

Section 112 Hazardous Air Pollutants (HAPs): None

State Regulations

California: This product does not contain chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.

California and OTC States: This product is for manufacturing use only - not for retail sale.

New Jersey Right to Know:
Aerosol: Acetone 67-64-1 ● n-Heptane 142-82-5 ● Methylcyclohexane 108-87-2 ● Carbon Dioxide 124-38-9 ● Pentyl Acetate 628-63-7
Bulk: Acetone 67-64-1 ● n-Heptane 142-82-5 ● Methylcyclohexane 108-87-2 ● Pentyl Acetate 628-63-7

International Regulations

Canadian Environmental Protection Act (CEPA):
All of the components of this product are included on the Canadian Domestic Substances list (DSL).

Canadian Workplace Hazardous Materials Information System WHMIS:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification:
Aerosol: Class A, Class B5, Class D2B

WHMIS Classification:
Bulk: Class B2, Class D2B

Other Regulations:

Montreal Protocol listed ingredients:	None
Stockholm Convention listed ingredients:	None
Rotterdam Convention listed engredients:	None
RoHS Compliant:	Yes

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LPS® ZeroTri®

Revision Date: **January 12, 2012** **Supersedes:** **August 17, 2010**

Section 16 • Other Information

MSDS#: 13520 MSDS Preparation Responsible Name: Elena Badiuzzi Compliance Manager Telephone: +1 770 243-8800	**HMIS 1996**		**HMIS III**		**NFPA** Flammability Health  Reactivity Special	
	Health:	1	Health:	[/] 1		
	Flammability:	3	Flammability Aerosol: Flammability Bulk:	4 3		
	Reactivity:	0	Physical Hazard Aerosol: Physical Hazard Bulk:	2 0		

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Elena Badiuzzi, Compliance Manager
LPS Laboratories, a division of Illinois Tool Works