



MATERIAL SAFETY DATA SHEET

LPS® QB Duster

Revision Date: October 14, 2011

Supersedes: November 25, 2008

Section 1 • Product and Company Identification

Product Name: LPS® QB Duster

Part Number(s): 05710, C05710

Chemical Name: Halogenated Hydrocarbons

Product Use: A nonflammable duster for removing contaminants, dirt, dust and other soils.

Manufacturer Information: LPS Laboratories, 4647 Hugh Howell Road, Tucker, GA, USA 30084
TEL: USA & Canada: 1 800 241-8334
Outside USA and Canada: +1 770 243-8800
FAX: USA & Canada: 1 800 543-1563
Outside USA and Canada: +1 770 243-8899

Emergency Telephone Number: Chemtrec: USA & Canada: 1 800 424-9300
Outside USA and Canada: +1 703 527-3887

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: CAUTION: Contents under pressure.

Bulk: Not applicable

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

Potential Acute Health Effects:

Eyes: Vapor and liquid can irritate eyes. May cause frostbite.

Skin: Prolonged or repeated skin contact can cause defatting and drying of the skin. Contact with rapidly volatilizing liquid or cold vapors can cause frostbite or freeze burns to any tissue due to the cryogenic (extreme low temperature) effect of the product.

Inhalation: Respiratory irritant. High vapor concentrations including an oxygen deficient atmosphere in enclosed areas can affect the nervous system and can cause headache, dizziness, drowsiness, unconsciousness and death. In susceptible individuals, cardiac sensitization can result in potentially fatal heartbeat irregularities.

Ingestion: Unlikely due to volatile nature of product. Low order of oral toxicity. Contact with liquid may cause frostbite to mouth and throat tissues.



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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 impaired cardiovascular function, heart disease or compromised heart function should avoid exposure. Inhalation of very high concentrations may result in cardiac arrhythmia.

Signs and Symptoms

Discoloration of the skin along with burning and/or tingling sensations, partial and complete numbness and possibly intense pain. Irritation, redness, swelling and tearing of the eyes. Breathing of high vapor concentrations may cause headaches and drowsiness. In severe overexposure to high vapor concentrations, loss of consciousness may occur. Spraying into mouth may cause frostbite to mouth and throat tissues.

Section 3 • Composition / Information on Ingredients

Component	CASRN	Weight Percent
1,1,1,2-Tetrafluoroethane	811-97-2	90 - 100%

Section 4 • First Aid Measures

Eyes: Flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention if irritation persists.

Skin: Flush exposed skin with lukewarm water (not hot) - or use other means to warm skin slowly. Get medical attention if frostbitten by liquid or if irritation occurs.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. Give oxygen if breathing is difficult. Call a physician. DO NOT give adrenaline, epinephrine or similar drugs following exposure to this product.

Ingestion: Not applicable - Product is a gas at ambient temperatures.



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Section 5 • Fire Fighting Measures

Products of Combustion: Hydrogen fluoride, carbon monoxide, carbon dioxide and possibly carbonyl fluoride

General Fire Hazards: High heat will cause product to boil, evolving vapor that could cause explosive rupture of closed containers.

Firefighting media: SMALL FIRE: Use CO₂, water spray, fog, dry chemical or water stream.
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:** None

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. Use water spray to keep containers cool.

Special Remarks on Explosion Hazards:

Intensive heat created by fire will cause aerosols to explode. May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products. Some mixtures of HFCs and air or oxygen may be combustible if pressurized and exposed to extreme heat or flame.

Section 6 • Accidental Release Measures

Containment Procedures:

Small Spill and Leak: Use halogen leak detector or other suitable means to locate leaks or check atmosphere. Keep upwind. Evacuate enclosed space and ventilate area. DO NOT smoke or operate internal combustion engines. Remove flames and heating elements.

Large Spill and Leak: Aerosols should not produce large spills.

Clean-Up Procedures: Recycle empty container as scrap metal if possible.

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

Special Procedures: Ventilate area. Wear personal protective equipment during cleanup.

Section 7 • Handling and Storage

Handling: Avoid breathing vapors and prolonged skin contact. Vapors are heavier than air. Keep out of reach of children.

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). Do not store in direct sunlight.

Precautions to be taken in handling and storage:

Store aerosols as Level 1 Aerosol (NFPA 30B). Store all materials in a dry, well-ventilated area. Avoid breathing vapors.



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Section 8 • Exposure Controls / Personal Protection

Exposure Guidelines:

Component	CASRN	OSHA	ACGIH	NIOSH	Supplier
1,1,1,2-Tetrafluoroethane	811-97-2	Not established	Not established	1000 ppm TWA WEEL 1000 ppm; TWA OEL - UK	1000 ppm TWA WEEL

Engineering Controls: Provide general and/or local exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Personal protective equipment

Eye protection: None required under normal conditions.

Hand protection: Use synthetic rubber gloves such as neoprene. Lined gloves are recommended for protection from the cold.

Respiratory protection: None required if good ventilation is maintained. If vapor concentration rises above exposure limits, use NIOSH approved respiratory protection (i.e. organic vapor cartridge). For large spills, or emergencies in completely enclosed areas, use self-contained breathing apparatus.

General Hygiene Considerations: Avoid breathing mist. Avoid eye and skin contact. Have eye-wash facilities immediately available. Wash thoroughly after handling and before eating or drinking.



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Section 9 • Physical and Chemical Properties

Appearance:	Liquefied gas	Color:	Clear, colorless
Odor:	Ethereal	Evaporation Rate:	Not applicable
Solubility Description:	0.9 g/L in water (25°C)	Flash Point:	Not applicable
Boiling Point:	-26.4°C (-15.5°F)	Flash Point Method:	Not applicable
Specific Gravity (H₂O=1):	1.19 - 1.23 @ 20°C	Decomposition Temperature:	Not established
Vapor Density (air = 1):	3.54	Auto ignition temperature:	743°C (1369°F)
Vapor Pressure:	4432 mm Hg @ 21.1°C	Flammable limits (estimated):	LOWER: None UPPER: None
Rule 1171 PPc:	Not established	Partition Coefficient (octanol/water):	> 1
V.O.C. Content:	Aerosol: 0% per State & Federal Consumer Product Regulations Bulk: Not applicable	Odor Threshold:	Not established
Melting Point:	Not established	Viscosity:	Not established
pH:	Not applicable	Volatiles:	100%
Heat of combustion:	Aerosol: < 20 kJ/g Bulk: Not applicable		

Section 10 • Stability and Reactivity

Chemical Stability:	Product is stable under recommended storage conditions.
Conditions to Avoid:	Avoid contact with open flame and other hot surfaces which can cause thermal decomposition.
Incompatibility:	Reactive or incompatible with strong alkalis or alkaline earth metals, finely powdered metals such as aluminum, magnesium, zinc and strong oxidizers.
Hazardous Decomposition:	Thermal decomposition may yield hydrogen fluoride, carbon monoxide, carbon dioxide and carbonyl halide.
Hazardous Polymerization:	Will not occur.



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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.

Following exposure to vapors, this material can produce central nervous system depression. High atmospheric concentrations can result in eye, nasal and respiratory tract irritation. However, if handled in accordance with good industrial hygiene practice, this product will not present a significant hazard in the workplace.

B: Component Analysis

Component	CASRN	LC-50	LD-50
1,1,1,2-Tetrafluoroethane	811-97-2	567000 ppm / rat / 4 hr	Not appropriate

* Supplier Data

Section 12 • Ecological Information

Mobility: Volatile. Evaporates very readily. **Persistence / Degradability:** Not readily biodegradable

Bioaccumulative potential: No bioaccumulation potential **Other adverse effects:** See below

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	1,1,1,2-Tetrafluoroethane	811-97-2	96-hr LC50	Oncorhynchus Mykiss	450 g/L
Acute Toxicity on Daphnia	1,1,1,2-Tetrafluoroethane	811-97-2	48-hr LC50	Daphnia Magna	930 mg/L
Bacterial Inhibition	1,1,1,2-Tetrafluoroethane	811-97-2	16-hr EC10	Bacteria	730 mg/L
Growth inhibition of algae	No data available				
Bioaccumulation in fish					

* Supplier Data

Biodegradability: 3% after 28 days

Degradation half-life in the atmosphere: 9.6 - 16.7 years

Ozone depletion potential (ODP): 0

Halocarbon global warming potential (HGWP): 0.3

Bioaccumulation: log Pow 1.06



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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 code 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

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.:	3159	ADR Class:	2
	Packing Group:	NA	Classification Code:	2A
	Name and description:	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)	Hazard ID No.:	NA
	Labeling:	2.2	Technical Name:	NA
IMDG-IMO	UN No.:	3159	Class:	2.2
	Shipping Name:	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)	Subsidiary Risk:	NA
	Labeling:	2	Packing Group:	NA
	Packing Instructions:	DOT-SP 11644	EmS:	F-C, S-V
	Marine pollutant:	No	Technical Name:	NA
IATA - ICAO:	UN No.:	3159	Class:	2.2
	Shipping Name:	1,1,1,2-Tetrafluoroethane	Subclass:	NA
	Packing Instructions:	DOT-SP 11644 (CAO)	Packing Group:	NA
	Labeling:	Non-flammable Gas	Technical Name:	NA

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.: D003

Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA):
None

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, Immediate (Acute) 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



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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: Not for sale in California. This product is not regulated under OTC consumer product regulations.

New Jersey Right to Know:
 Aerosol: 1,1,1,2-Tetrafluoroethane 811-97-2
 Bulk: Not applicable.

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 D2B <div style="display: flex; justify-content: space-around; align-items: center;"> </div>
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Other Regulations:

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

Section 16 • Other Information

MSDS#: 15710 MSDS Preparation Responsible Name: Elena Badiuzzi Compliance Manager Telephone: +1 770 243-8800	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">HMIS 1996</th> <th colspan="2" style="text-align: center;">HMIS III</th> </tr> <tr> <td style="padding: 2px;">Health:</td> <td style="text-align: center; padding: 2px;">1</td> <td style="padding: 2px;">Health:</td> <td style="text-align: center; padding: 2px;">[] 1</td> </tr> <tr> <td style="padding: 2px;">Flammability:</td> <td style="text-align: center; padding: 2px;">0</td> <td style="padding: 2px;">Flammability Aerosol:</td> <td style="text-align: center; padding: 2px;">2</td> </tr> <tr> <td style="padding: 2px;">Reactivity:</td> <td style="text-align: center; padding: 2px;">1</td> <td style="padding: 2px;">Flammability Bulk:</td> <td style="text-align: center; padding: 2px;">NA</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;">Physical Hazard Aerosol:</td> <td style="text-align: center; padding: 2px;">2</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;">Physical Hazard Bulk:</td> <td style="text-align: center; padding: 2px;">NA</td> </tr> </table>	HMIS 1996		HMIS III		Health:	1	Health:	[] 1	Flammability:	0	Flammability Aerosol:	2	Reactivity:	1	Flammability Bulk:	NA			Physical Hazard Aerosol:	2			Physical Hazard Bulk:	NA	<table style="width: 100%;"> <tr> <td style="text-align: center; vertical-align: middle;"> NFPA Flammability Special </td> <td style="text-align: center; vertical-align: middle;"> Health Reactivity </td> </tr> </table>	NFPA Flammability Special	Health Reactivity
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		Physical Hazard Bulk:	NA																									
NFPA Flammability Special	Health Reactivity																											

Notice to Reader:
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Elena Badiuzzi, Compliance Manager
 LPS Laboratories, a division of Illinois Tool Works