



MATERIAL SAFETY DATA SHEET

LPS QB Duster

Revision 5

Revision Date: 11/25/08

Supersedes: 5/20/08

Section 1 • Product and Company Identification

Product Name: LPS QB Duster

Part Number: 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 Rd., Tucker, GA, USA 30084

TEL: 1 770-243-8800

Emergency Telephone Number: 1-800-424-9300 Chemtrec;
Outside U.S.: (703) 527-3887

FAX: 1 770-243-8899

Website: <http://www.lpslabs.com>

PLAIN LANGUAGE HAZARD SUMMARY

Material Safety Data Sheets can be confusing. Federal and State laws require us to include a great deal of technical information that probably won't help the non-professional. LPS includes this "PLAIN LANGUAGE HAZARD SUMMARY" to address the questions and concerns of the average worker. If you have additional health, safety or product questions, don't hesitate to call us at 800/241-8334.

Worker Toxicity

LPS QB Duster is a moisture-free compressed gas that provides a quick blast for removing dirt, dust and other contaminants from delicate assemblies and electronic components. High concentration of the vapor from QB Duster can be irritating to the eyes and respiratory tract; liquid contact with eyes or skin may cause frostbite. Hold can upright while spraying to prevent dispensing liquid which could cause frostbite. For more exposure and first aid information, refer to MSDS Sections 2, 8 and 11.

Flammability

LPS QB Duster is non-flammable. LPS QB Duster is liquid and gas under pressure, overheating may cause gas release or violent cylinder bursting. Do not spray into open flames or on hot metal surfaces because it may produce toxic or corrosive products. See Handling and Storage precautions.

Disposal

Dispose of in accordance with local, state and federal regulations. See section 13 for more details.



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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: CAUTION: Contents under pressure. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Do not place in hot water or near radiators, stoves or other sources of heat. Do not puncture or incinerate container or store at temperatures above 49°C (120°F). Do not store in vehicles. Do not breathe spray. Use under well ventilated conditions. May cause skin and eye irritation. Liquid contents will cause frostbite if sprayed on skin. Clear, colorless liquefied gas with faint ethereal (ether like) odor.

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 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 irritation. 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.

Potential Chronic Health Effects:

Carcinogenic Effects: NTP: No IARC: No OSHA: No

Mutagenic Effects: None

Teratogenic Effects: 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

Skin: Discoloration of the skin, along with burning and/or tingling sensations, partial or complete numbness, and possibly intense pain.

Eyes: Irritation, redness, swelling, and tearing.

Inhalation: Breathing of high vapor concentrations may cause headaches, drowsiness. In severe overexposure to high vapor concentrations loss of consciousness may occur.

Ingestion: Not applicable, yet spraying into mouth may cause frostbite to mouth and throat tissues.



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Section 3 • Composition / Information on Ingredients

Component	CASRN	Percent by Weight (%)
1,1,1,2-tetrafluoroethane (HFC-134a)	811-97-2	90 - 100%

Section 4 • First Aid Measures

- Eyes:** Flush eyes with plenty of water for at least 15 minutes. Get medical attention.
- 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.

Section 5 • Fire Fighting Measures

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

Firefighting media:

Small Fire: Use water spray or fog, CO₂, dry chemical, or water stream.

Large Fire: Use water spray or fog, CO₂, dry chemical, or water stream.

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

Methods for Clean-up:

In case of spill or leak:

Aerosols should not produce large spills. 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.



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Section 7 • Handling and Storage

Handling and Storage: Store aerosols below 120°F and above 32°F. Store all materials in dry, well-ventilated area away from ignition sources. Avoid breathing vapors and prolonged skin contact. Vapors are heavier than air. Do not store in direct sunlight. Keep out of reach of children.

Precautions to be taken in handling and storage: Store all materials in dry, well-ventilated area. DO NOT breathe vapors.

Section 8 • Exposure Controls / Personal Protection

Exposure Guidelines:

Component	CASRN	OSHA	ACGIH	OTHER WEEL-TWA*
1,1,1,2-tetrafluoroethane (HFC-134a)	811-97-2	Not Established	Not Established	1000 ppm

*Recommended Workplace Environmental Exposure Level (WEEL) Established by American Industrial Hygiene Association (8-Hour Time Weighted Avg.)

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

Personal Protection:

Eyes: Wear chemical splash glasses/goggles/face shield when there is potential for eye contact. Contact lenses should not be worn.

Respiratory: None required if good ventilation is maintained. If vapor concentration rises above exposure limits, use appropriate NIOSH respirator. For large spills or emergencies in completely enclosed areas, use self-contained breathing apparatus.

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

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.

Section 9 • Physical and Chemical Properties

Appearance:	liquefied gas	Color:	Clear, colorless
Odour/Taste:	Ethereal (ether-like)	Vapour Pressure:	85.7 psia @21.1° C
Solubility Description:	0.9 g/L in water (25°C)	Evaporation Rate:	Not Applicable
Boiling Point:	-26.4 °C/-15.5 °F	Flash Point (°C): (dispensed liquid)	Not Applicable
Specific Gravity: (Water=1)	1.21	Flash Point Method:	Not applicable
Vapour Density: (air=1)	3.54	Auto Ignition Temperature (°C):	743 °C/ 1369 °F
VOC Content:	0%, 0g/L per CARB		
Flammable limits: (estimated)	LEL: none UEL: none	Partition Coefficient (octanol/water):	log P _{ow} : 1.06
Viscosity:	Not Available	% Volatility volume:	100%



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Section 10 • Stability and Reactivity

Stability and Reactivity: The product is stable under specified conditions or storage, shipment and/or use. See Handling and Storage section.

Incompatibility with Various Substances: Avoid contact with strong alkalis or alkaline earth metals, finely powdered metals such as aluminum, magnesium, zinc, and strong oxidizers.

Hazardous decomposition products: Halogen acid (HF) Carbon Monoxide, Carbon dioxide, and Carbonyl halide

Hazardous polymerization: None

Section 11 • Toxicological Information

Acute and Chronic Toxicity

General Product Information

Following exposure to a high concentration of 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.

Components	CASRN	LC-50	LD-50
1,1,1,2-tetrafluoroethane (HFC-134a)	811-97-2	500,000 ppm inhalation/rat/4H	Not Established

Section 12 • Ecological Information

Component Data: Acute Aquatic Toxicity

Components	CASRN	Test	Species	Results
1,1,1,2-tetrafluoroethane (HFC - 134a)	811-97-2	96 h LC ₅₀	Rainbow Trout	450 g/L
		48 h EC ₅₀	Daphnia Magna	930 mg/L
		16 h EC ₁₀	Bacteria	730 mg/L

Chemical Fate

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 P _{ow} 1.06



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Section 13 • Disposal Considerations

- Waste Status:** Aerosol products, if depressurized and emptied to less than 2.5 cm of fluid contents are classified as non-hazardous waste under 40 CFR 261.7 (U.S.). If disposed of in its received form, this item carries waste code D003. (U.S.)
- Disposal:** Waste must be disposed of in accordance with federal, state and local environmental control 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 or otherwise different from federal laws and regulations.

Section 14 • Transport Information

D.O.T. Ground	Shipping Name:	Consumer Commodity	UN Number:	NA
	Hazard Class:	ORM-D	Technical Name:	NA
	Subclass:	NA	Hazard Label:	ORM-D Already on box
Road/Rail - ADR/RID :	UN no:	1950	ADR Class:	2
	Packing group:	NA	Classification code:	5A
	Name and Description:	AEROSOLS, asphyxiant	Hazard ID no:	NA
	Labeling:	2.2		
IMDG-IMO	UN no:	1950	Class:	2.2
	Shipping Name:	AEROSOLS	Subsidiary Risk:	2.2
	Packing Instructions:	P003, LP02	Packing group:	NA
	Marine pollutant:	NO	EmS:	F-D, S-U
IATA-ICAO	UN no:	1950	Class:	2.2
	Shipping Name:	AEROSOLS, non-flammable	Subclass	NA
	Packing instructions:	NA	Packing group:	NA
	Labeling:	2.2		

NA- Not Applicable



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Section 15 • Regulatory information

U.S. Federal Regulations

RCRA Hazardous Waste No.: D003

Comprehensive Environmental Response 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 (aerosols only), 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

State Regulations

New Jersey RTK:

1, 1, 1, 2-tetrafluoroethane 811-97-2

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

California and OTC States: This product is not regulated by consumer product regulations.

International Regulations

Canadian Environmental Protection Act: 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



Other Regulations

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



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Section 16 • Other Information

MSDS# 15710 Responsible Name: Clea Johnson Regulatory Affairs Coordinator	HMIS 1996	HMIS III	NFPA <div style="text-align: center;">  <p style="margin: 0;">Health 1 0 1 Reactivity</p> </div>
	Health: 1	Health: []1	
	Flammability: 0	Flammability: 0	
	Reactivity 1	Physical Hazard 2	

Notice to Reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Clea Johnson, Regulatory Affairs Coordinator
 LPS Laboratories, A division of Illinois Tool Works