MATERIAL SAFETY DATA SHEET
LPS QB Duster

Revision 5 **Revision Date: 11/25/08** **Supercedes: 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.

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.

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.

Section 7 • Handling and Storage

Handling and Storage: Store aerosols below 120ºF and above 32ºF. 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%

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

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

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.

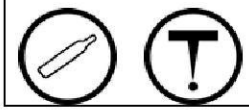
International Regulations

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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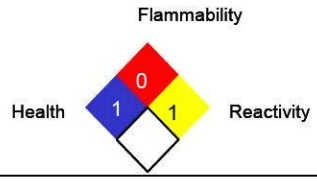
Section 16 • Other Information

MSDS# 15710 **Responsible Name:** **Clea Johnson** **Regulatory Affairs Coordinator**	**HMIS 1996**		**HMIS III**		**NFPA**
	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

January 19, 2010

U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 11644
(NINTH REVISION)

EXPIRATION DATE: November 30, 2013

(FOR RENEWAL, SEE 49 CFR § 107.109.)

1. GRANTEE: Ball Aerosol & Specialty Container, Inc.
Elgin, IL

2. PURPOSE AND LIMITATION:

a. This special permit authorizes the manufacture, marking, sale and use of a non-refillable non-DOT specification inside metal container conforming in part with the DOT Specification 2Q, to transport certain refrigerant gases. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.

b. SPECIAL PERMIT SCOPE LIMITATIONS - A special permit authorization to manufacture, mark, sell, and transport only represents certification of safety for a package when it is an article of commerce in transportation. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.304a(e) and § 173.306(a)(3) in that a non-DOT specification package is not authorized, except as specified herein.

5. BASIS: This special permit is based on United States Can Company's application dated October 14, 2009, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper shipping name	**Hazard Class/ Division**	**Identification Number**	**Packing Group**
1,1,1,2 Tetrafluoroethane *or* Refrigerant gas R134a	2.2	UN3159	N/A
Consumer commodity, as appropriate	ORM-D	None	N/A
Refrigerant gases, n.o.s.	2.2	UN1078	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-refillable non-DOT specification inside metal container conforming with United States Can Company drawing number 211VCTR, or drawings 211VCND and 2075PRM on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA), and DOT Specification 2Q (§ 178.33a) except as follows:

§ 178.33a-2 Type and size.

(a) * * *

(b) The maximum capacity of the containers manufactured under this special permit may not exceed 32.5 cubic inches (18.0 fluid ounces). The maximum diameter must not be more than 2.7 inches.

§ 178.33a-6 Manufacture.

(a) * * *

(b) * * *

(c) Ends: The dome must be equipped with a pressure relief device (PRD) as depicted in the drawing on file

with OHMSPA. The bottom must be designed to buckle at pressures greater than the pressure at which the dome buckles and vents.

§ 178.33a-7 Wall thickness.

(a) The minimum wall thickness for containers manufactured under this special permit is 0.009 inches.

§ 178.33a-8 Tests.

(a) Each 2500 containers or less, successively produced as a batch or part thereof must constitute a lot. Two containers, one with a PRD and one without a PRD, taken randomly from each lot and complete with the ends assembled must be pressure tested to destruction. For containers fitted with a PRD, the dome must not buckle below 220 psig. Upon buckling, the dome must vent, and the bottom must not buckle. The burst pressure of containers without a PRD may not be less than 320 psig.

(b) If either of the test containers fails to meet the above requirements, the lot must be rejected. However, an additional 5 randomly selected pairs of containers from that lot may be pressure tested to qualify that lot. If any of the additional test containers fail the pressure test, that lot must be rejected.

§ 178.33a-9 Marking.

(a) * * *

(1) Containers must be marked “DOT-SP 11644" in lieu of “DOT 2Q”.

(2) * * *

b. TESTING - Prior to shipment, each completed container must be heated until the pressure in the container is equivalent to the equilibrium pressure of the lading at 130° F. Lading equilibrium pressure may not exceed 198 psig at 130° F. Acceptable containers must show no evidence of leakage, distortion or other defect.

c. OPERATIONAL CONTROLS - Each packaging must be prepared and shipped in accordance with the following:

(1) The liquid content of the lading may not completely fill the container at 130° F.

(2) The container must be packed in a strong outside packaging as prescribed in § 173.301(a)(9).

8. SPECIAL PROVISIONS:

a. Containers filled with a material meeting the definition of a "consumer commodity" in § 171.8 may be renamed “Consumer commodity”, reclassed as an ORM-D material and shipped in accordance with § 173.306(i). The outside packagings are not required to be marked "INSIDE CONTAINERS COMPLY WITH DOT-SP 11644".

b. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

c. A person who is not a holder of this special permit, but receives a packaging covered by this special permit, may reoffer it for transportation provided no modifications or changes are made to the packaging and it is offered for transportation in conformance with this special permit and the HMR.

d. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

e. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

f. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.

g. MARKING - Each outside packaging must be marked "INSIDE CONTAINERS COMPLY WITH DOT-SP 11644".

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, and cargo only aircraft.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each aircraft and cargo vessel used to transport packages covered by this special permit. The shipper must furnish a current copy of this special permit to the air carrier before or at the time the shipment is tendered.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by § 172.700 through § 172.704.

No person may use or apply this special permit, including display of its number, when the special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:

for Dr. Magdy El-Sibaie
Acting Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/special permit Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: dl