SAFETY DATA SHEET

Boron Carbide Abrasive Suspension

1.0 Chemical Product and Company Identification

Product Name:	Boron Carbide Abrasive Suspension
Part Numbers	LBS08, LBS14
Product Use/Class:	Various Uses, Abrasive and Polishing Compound
Distributor:	Ladd Research
Address:	3 Ewing Place
City, State, Zip	Essex Junction, VT 05452 USA
Phone Number:	802-658-4961
Emergency Phone:	800 424-9300 (Chemtrec)

2.0 Hazard Identification

GHS Classification: Non-Hazardous

IDLH (Immediate Danger to Life and Health): None

Carcinogenic Assessment (NIP Annual Report, IARC Monographs, other):
Not Listed

Physical Hazards: None

Health Hazards: Classification of the Substance of Mixture (Dry Dust / Inhalation):
None

Label Elements: (Dust / Inhalation)

Signal Word: None

Hazard Statement(s):
H335: May Cause Respiratory Irritation (Dust Inhalation)

Precautionary Statements:
P260: Do not breath dust
P281: Use personal protective equipment as required

Precautionary Response:
P305: **IF IN EYES**: Rinse cautiously with water for 15 minutes.
P304+P340: **IF INHALED**: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P302+P350: **IF ON SKIN**: Wash gently with soap and water.
P301+310: **IF SWALLOWED**: Immediately call a POISON CENTER or doctor/physician for most current information.

3.0 Composition & Hazardous Ingredients

The terms “hazardous” and “hazardous materials” as used within this SDS (EU - MSD) should be interpreted as defined by, and accordance with, the OSHA Hazard Communication Standard (29 CFR 1910:1200) and the EU Occupational Exposure Limits (OEL) REGULATION (EC) No 1272/2008 including cited Appendices, Lists, References, etc., all of which are hereby incorporated by reference and stated below as appropriate.

OECD SIDS documents published by UNEP Chemicals in response to its mandate to facilitate the access to information needed for health and environmental risk assessment of chemicals. The documents contain the information gathered and an Initial Assessment performed under the framework of the OECD HPV Chemicals Programme.

Substance	CAS Number	EC Number	Percent by Weight
Boron Carbide	12069-32-8	N/A	< 10%
Non Hazardous Components	N/A	N/A	Balance

Hazardous Mixtures: None
(See Section 8.0 for Occupational Exposure Limits)

4.0 First Aid Measures

First-aid measures general: If medical advice is needed, have product container or label at hand.

First-aid measures after inhalation: If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.), remove from exposure and seek medical attention.

First-aid measures after skin contact: Wash affected area with soap and water and isolate from exposure. If irritation or rash persists, seek medical attention.

First-aid measures after eye contact: Immediately rinse with water for a prolonged period while holding the eyelids wide open. Seek medical attention if material is embedded in eye. If eye irritation persists: Get medical advice and attention.

First-aid measures after ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Symptoms/injuries: Repeated or prolonged inhalation may damage lungs.

Symptoms/injuries after inhalation: May cause irritation to the respiratory tract, sneezing, coughing, burning sensation of throat.

Symptoms/injuries after skin contact: Prolonged contact with large amounts of dust may cause mechanical irritation. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Symptoms/injuries after eye contact: Redness, pain.

Symptoms/injuries after ingestion: Abdominal pain.

Chronic symptoms: Respiratory difficulties.

5.0 Fire-Fighting Measures

Fire Hazard: Not Flammable under normal conditions.

Extinguishing Media: Product will not burn. Use ABC type fire extinguisher for surrounding fire.

Special Firefighting Procedures: For a powder fire confined to a small area - use a respirator approved for dusts

Unusual Fire and Explosion Hazards: None

Reactivity: Hazardous reactions will not occur under normal conditions.

Protection During Firefighting: Use normal individual fire protective equipment.

6.0 Accidental Release Measures

Personal Precautions / Protective Equipment:
Do not breathe dust. Avoid generation of dust during clean-up of spills. Recover the product by vacuuming, shoveling or sweeping. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up. Wear suitable protective clothing, gloves and eye/face protection. If airborne dust is generated, use the appropriate NIOSH approved respiratory protection if PEL is exceeded..

Environmental Precautions: Prevent further leakage or spillage and comply with local, state and federal regulations.

Methods / Materials for Containment & Clean-up:

If product is dried, avoid generation of dust during clean-up of spills. Recover the dried product by vacuuming, shoveling or

sweeping. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up. Liquid product can be wiped or mopped up and disposed of accordingly.

7.0 HANDLING & STORAGE

Precautions for Safe Handling:

Do not breathe dust. Avoid generation of dust during clean-up of spills. Recover the product by vacuuming, shoveling or sweeping. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up.

Wear suitable protective clothing, gloves and eye/face protection. If airborne dust is generated, use the appropriate NIOSH approved respiratory protection.

Conditions for Safe Storage:

Store in a cool dry place. Keep container tightly closed while being stored or not in use.

No incompatible materials while in water.

8.0 EXPOSURE CONTROLS & PERSONAL PROTECTION

Control Parameters: Use in accordance with safest practices.

Boron Carbide Powder (BCP) – 12069-32-8

ACGIH TWA (mg/m³):	Not Established
ACGIH STEL:	Not Established
ACGIH TLV:	15.0 mg/m³ - General Dust
NIOSH REL (TWA) (mg/m3):	15.0 mg/m³ - General Dust
OSHA PEL (TWA) (mg/m3): **(Dried Product - Dust)**	15.0 mg/m³ - General Dust
IDLH (mg/m³):	15.0 mg/m³ - General Dust
OECD SIDS UNEP TLV:	NA
BAuATRGS 900:	NA

TLV: Threshold Limit Value of a chemical substance is a level to which it is believed a worker can be exposed day after day for a working lifetime without adverse health effects.
TWA: (Time Weighted Average - TLV-TWA): average exposure on the basis of a 8h/day, 40h/week work schedule
STEL: (Short Term Exposure Level) is an employee's 15-minute time weighted average exposure at any time during a work day and cannot be repeated more than 4 times in a day.

Personal Protective Equipment: In case of dust production: dust proof clothing (Tyvek), protective goggles, respiratory protection, self contained breathing apparatus as prescribed below:

Respiratory Protection: Use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the appropriate PEL or TLV. All requirements set forth in 29CFR1910.134 must be met.

Protective Gloves: Protective gloves or barrier creams are recommended when contact with dust or mist is likely. Wash thoroughly prior to applying barrier creams or using protective gloves.

Ventilation: Use local exhaust ventilation which is adequate to limit personal exposure to airborne dust to levels which do not exceed the appropriate PEL or TLV. If such equipment is not available, use respiratory protection as specified above.

Eye protection: Safety glasses with side shields or goggles are recommended.

Other Equipment: Full body protective clothing is advisable if contact with dust is expected. Work clothing should be changed daily if it is suspected that the clothing is contaminated.

9.0 Physical and Chemical Properties

Appearance and Odor:	Odorless
Color:	Dark Grey to Black
Physical State:	Solid
pH:	NA
Viscosity:	NA
Specific Gravity:	2.51 g/cm^3
Vapor Density:	NA
Vapor Pressure:	NA
Melting Point:	2450°C
Boiling Point:	NA
Flash Point:	NA
Freezing Point:	NA
Percent Volatility:	NA
Evaporation Rate (baC=1)	NA
Solubility in Water:	Not Soluble
Solubility in Oil:	Not Soluble
Solubility in Solvents:	Not Soluble

10.0 Stability and Reactivity

Reactivity: Hazardous reaction will not occur under normal conditions.

Stability: This composition is stable under normal conditions.

Incompatibility (materials to avoid): Most components are soluble in nitric and sulfuric acid.

Hazardous Decomposition Products: Carbon Oxides / Boron Oxides

Hazardous Polymerization: Will not occur.

Conditions to Avoid: None

11.0 Toxicological Information

Acute Toxicity:	Not Classified
Skin Corrosion / Irritant:	Not Classified.
Serious Eye Damage / Irritant:	Not Classified
Respiratory / Skin Sensitization:	Not Classified
Germ Cell Mutagenicity:	Not Classified
Carcinogenicity:	Not Classified
Reproductive Toxicity:	Not Classified
Target Organ Toxicity (Single Exposure):	No Data Available
Target Organ Toxicity (Repeated Exposure):	No Data Available
Aspiration Hazard:	Not Classified
Teratogenicity:	Not Classified

12.0 Ecological Information

Ecotoxicity:	This product is not expected to be toxic to the environment. Adopt environmental controls to prevent the product from being released into the environment.
Persistence and Degradability:	Not readily biodegradable.
Bioaccumulative Potential:	Not expected to bioaccumulate
Mobility in Soil:	No information available
Other Adverse Effects:	No information available

13.0 DISPOSAL CONSIDERATION

Spillage should be cleared with vacuum equipment, protected against static electricity, to avoid dust discharge. You may moisten product to be swept. Dispose in a safe manner in accordance with local, state and federal regulations.

14.0 TRANSPORT INFORMATION

US DOT Classification:	Non-regulated
IMO Classification:	Non-regulated
IATA Classification:	Non-regulated
Proper Shipping Name:	Non-regulated
UN Number:	Non-regulated
Packing Group:	Non-regulated
Label:	Non-regulated
Reportable Quantity:	Non-regulated
Hazard Class:	Non-regulated

15.0 REGULATORY INFORMATION

U.S. Federal Regulations:
Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA):
Not listed under CERCLA

Toxic Substance Control Act (TSCA):
All components of this material are listed on the TSCA Inventory.

Clean Water Act (CWA):
None listed under sections of the Clean Water Act. Contact your local / state authorities to determine if substances are regulated under their jurisdiction.

Clean Air Act (CAA):
None listed under various sections of the Clean Water Act.

Superfund Amendments and Reauthorization Act (SARA) Title III Information:
This product does not contain toxic chemical (s) subject to reporting requirements of SARA Title III,
Section SARA 311 / 312 / 313 (40 CFR 372) for immediate (acute) health hazard and delayed (chronic) health hazard.

European / International Regulations:
Control of Substances Hazardous to Health (COSHH):
Component(s) are not listed under various sections of the COSHH regulation. Contact your local authorities to determine if substances are regulated under their jurisdiction.

Scottish Environmental Protection Agency (SEPA):
Component(s) are not listed under various sections of SEPA. Contact your local authorities to determine if substances are regulated under their jurisdiction.

Canada:
The Components are not listed on the DSL (Domestic Substances List) inventory.
WHMIS Classification: Not listed

Hazard Classification:
European Union Directives 67/548/EEC and 1999/45/EC
Safety Phrases: S 22 Do not breathe dust.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S 36 Wear suitable protective clothing.

U.S. State Regulatory Information: The components of these products are covered under specific State regulations, as denoted below:

California Proposition 65: This product does not contain components regulated under California Proposition 65.

U.S. - New Jersey – Right to Know Hazardous Substance List - Boron Carbide 12069-32-8
U.S. - Massachusetts – Right to Know Hazardous Substance List - Boron Carbide 12069-32-8
U.S. - Pennsylvania – Right to Know Hazardous Substance List - Boron Carbide 12069-32-8

International Air Transport Authority (IATA): Non-hazardous for air transport

16.0 OTHER INFORMATION

NFPA health hazard	1 - Exposure would cause irritation with only minor residual injury
NFPA fire hazard	0 - Materials that will not burn.
NFPA reactivity	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health	1 - Irritation or minor reversible injury possible.
Flammability	0
Physical	0
Personal Protection	E

Reference:
UNEP Publications, OECD SIDS, Chemical Abstract Search (CAS) Database, European Chemicals Agency (ECHA), Workplace Hazard Material Information System (WHMIS)
Material Safety Data Sheets from Manufacturer.

Key/Legend
ACGIH = American Conference of Governmental Industrial Hygienists; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; WHMIS=Workplace Hazard Material Information System; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

DISCLAIMER

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All chemicals may pose unknown hazards and should be used with cautions. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. All information appearing herein is based upon data obtained from the manufacture and/or recognized technical sources. While this SDS is based on technical data judged to be reliable, Ladd Research assumes no responsibility for the completeness or accuracy of the information contained herein. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and protection of the environment.