MATERIAL SAFETY DATA SHEET

Grex Cordless Fuel Cartridge

Section 1 - Chemical Product and Company Information

Product Name:	Grex Cordless Fuel Cartridge
Chemical Family:	Paraffin Series Hydrocarbon
Chemical Name:	Propane (97.97 Mole%) / Isobutane (2.03 Mole%)
Manufacturer:	Grex Power Tools
	1090 Monterey Pass Rd. Monterey Park, CA 91754 USA
	support@grexusa.com
	888-447-3926
Emergency Number:	800-424-9300 (CHEMTREC)

Section 2 – Hazards Identification

Emergency Overview

Product is a simple asphyxiant and may cause frost bite.
Product is colorless, tasteless, odorless, and highly flammable.

Potential Health Effects

Eyes	Contact with liquid can freeze tissue similar to thermal burn.
Skin	Contact with liquid may freeze tissue, similar to thermal burn.
Ingestion	Not a likely route of exposure under normal product handling conditions.
Inhalation	Acute exposure may cause nausea, vomiting, coughing and pulmonary irritation. No apparent ill effects in breathing concentrations of 5% for 2 hours. Causes drowsiness in a short time in concentrations of 1%. Chronic exposure may cause dizziness, weakness, peripheral numbness and nervousness.

HMIS Ratings

Health: 1 Fire: 4 HMIS Reactivity: 0
Scale: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe; * = Chronic hazard

Section 3 – Composition / Information on Ingredients

CAS #	Component	Percentage
68476-86-8	Petroleum gases, liquefied	100

Section 4 – First Aid Measures

Eyes	In case of contact with eyes, rinse immediately with plenty of water & seek medical advice.
Skin	May cause frostbite. Seek medical attention.
Ingestion	Substance is mixture of liquefied petroleum gas; ingestion is not normal route for exposure.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration taking care to avoid contact with this product. Seek medical advice.

Section 5 – Fire Fighting Measures

General Fire Hazards

See Section 9 for Flammability Properties.

Product is highly flammable and forms explosive mixtures with air, oxygen, and all oxidizing agents. Extreme hazard; gas leaks or liquid spills readily form flammable mixtures at temperatures below ambient. Risk of fire or explosion by mechanical impact, friction, sparks, flames or other sources of ignition. Vapors settle to ground level and may reach ignition sources remote from the point of escape via drains and other underground passages. Static discharge; material can accumulate static charges which may cause an incendiary electrical discharge.

Hazardous Combustion Products

Smoke, carbon monoxide may be formed in the event of incomplete combustion.

Extinguishing Media

Carbon Dioxide, dry chemical, mist or water spray.

Fire Fighting Equipment/Instructions

Fire Fighting Measures:

Flammability: Do not attempt to extinguish the fire until the source is shut off. Fire and Explosion Hazards: Extreme hazard; gas leaks or liquid spills readily form flammable mixtures at temperatures below ambient. Risk of fire or explosion by mechanical impact, friction, sparks, flames or other sources of ignition. Vapors settle to ground level and may reach ignition sources remote from the point of escape via drains and other underground passages. Static discharge; material can accumulate static charges which may cause an incendiary electrical discharge.

Special Fire-Fighting Procedures:

To prevent uncontrolled explosive re-ignition, do not extinguish flame at leak. Cut off fuel if safe to do so and/or allow fire to burn out under controlled conditions. Extinguish small residual fires with foam or dry chemical powder. Respiratory and eye protection required for firefighting personnel exposed to fumes or smoke. Use water spray to cool equipment.

Fire fighters should do the following:

* Fight fire from the maximum distance possible, or use unmanned hose holders or monitor nozzles.
* Cool containers by flooding them with large quantities of water until well after fire is out.
* Be aware when a BLEVE occurs, sections of the cartridge can fly in any direction.

Fire departments should do the following:

* Follow the OSHA regulations [29 CFR*1910.120 (q)] Emergency response to hazardous substance releases]. These regulations should be incorporated into fire department standard operating procedures (SOPs), which should be strictly enforced.
* Train first responders to be aware of the hazards associated with propane fires, including BLEVE.
* CFR = Code of Federal Regulations

NFPA Ratings

Health: 1 Fire: 4 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Section 6 - Accidental Release Measures

Containment Procedures
Stop leak if possible. Eliminate all sources of ignition.
Prevent vapor from entering sewers, basements or confined areas.

Clean-Up Procedures
Evacuate all personnel and remain upwind of leak.

Evacuation Procedures
Evacuate the area promptly. Keep upwind of the spilled material and isolate exposure.

Special Procedures
Wear appropriate personal protection equipment.

Section 7 - Handling and Storage

Recommended Storage Temperature: Below 80°F (26.6°C)

Handling Procedures
Avoid high temperatures that may elevate component pressure above container rating. Fuel cartridges should be handled and stored so as to avoid puncture. Do not get into eyes; prevent contact with skin and clothing. Do not breathe dust. If product is placed in solution, take precautions to avoid breathing mists. When using, do not eat, drink, or smoke. Remove all contaminated clothing and wash before reuse. Wash thoroughly after handling.

Storage Procedures
Under normal conditions of storage and use of this product will not constitute a health hazard. However if released, being heavier than air, this product may collect in any confined space and may reach concentrations presenting an asphyxiation or safety hazard and may be ignited by pilot lights, other flames, sparks, heaters electric motors, static discharge, or other sources of ignition.

Direct contact of the skin with this product may cause frostbite or cold burns and containers may present a similar hazard when gas is being withdrawn, due to the cooling effect. Handling precautions should be strictly observed.

If a fire occurs, the potential always exists for an explosion known as boiling liquid expanding vapor explosion (BLEVE). To reduce this risk, fire departments, fire fighters, and tank owners and users should follow the recommendations below.

This product is stored under pressure at ambient temperatures.
Eliminate all sources of ignition from the storage area.

Instruct personnel handling this product in potential hazards and precautions, and train them in safe handling and emergency procedures.

Reference Documents:
National Fire Protection Association Pamphlets 58 and 30B are essential reference documents related to the safe use, handling, and storage of this product.

NFPA 30B: Code for the Manufacture and Storage of Aerosol Products

NFPA 30B provides the necessary measures for the safe manufacture, storage, and display of aerosol products. NFPA 30B should be consulted for the specific requirements for the use of this product as a component in the manufacture of aerosol products. This code should also be consulted for general safety principles applicable to any industrial use of this product. NFPA 30B contains numerous recommendations and many provisions which cannot be listed fully here.

NFPA 58: Liquefied Petroleum Gas Code

NFPA 58 applies to the storage, handling, transportation, and use of LP-Gases. LP-Gas This code should be consulted for the necessary requirements for the safe storage, handling and transportation of this product.

Section 8 - Exposure Controls / Personal Protection

Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

Engineering Controls

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Personal Protective Equipment

Eyes/Face	Wear chemical goggles.
Skin	Use impervious gloves.
Respiratory	Use in well ventilated area. Under normal conditions, respirator is not normally required.
General	Eye wash fountain and emergency showers are recommended.

Section 9 - Physical & Chemical Properties

Appearance:	Clear	Odor:	None
Physical State:	Gas	pH:	NA
Vapor Pressure:	108 (psig @ 70°)	Vapor Density:	1.5324
Boiling Point:	-42.59°F @ 1 ATM	Melting Point:	Gas
Solubility (H2O):	Slight Specific	Gravity:	0.5102
Evaporation Rate:	ND	VOC:	100%
Octanol/H2O Coeff:	ND	Flash Point:	-155.27° F
Flash Point Method:	Closed Cup	Burning Rate:	ND
Upper Flammability Limit (UFL):	9.5	Auto Ignition:	ND
Lower Flammability Limit (LFL):	1.8		

Section 10 - Chemical Stability & Reactivity Information

Chemical Stability

This is a stable material.

Conditions to Avoid

Ignition sources. High temperatures.

Incompatibility

Do not expose to strong oxidizing agents.

Hazardous Decomposition

Not Determined

Possibility of Hazardous Reactions

Will not occur.

Section 11 - Toxicological Information

Acute Dose Effects

Component Analysis - LD50/LC50

No LD50/LC50's are available for this product's components.

Carcinogenicity

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Section 12 - Ecological Information

Ecotoxicity

Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Section 13 - Disposal Considerations

Under US EPA regulations, the contents of the fuel cartridge are classified as ignitable hazardous wastes identified with number D001 and are therefore subject to the Resource Conservation and Recovery Act (RCRA). Fuel cartridges used in or by commercial or industrial facilities must therefore collect, manage and properly dispose of fuel cartridges according to all federal, state and local regulations.

However, if the used fuel cartridges are generated by a residential household, they are excluded from the definition of hazardous waste in accordance to 40 CFR 261.4(b)(1). Therefore, the used fuel cartridges generated by households can usually be disposed as general refuse in a properly permitted municipal landfill. Users are still advised to contact their local waste authorities for proper disposal procedures.

In most cases, if the fuel cartridge is empty, it can be recycled or disposed as nonhazardous waste. In accordance with the EPA's definition of an empty container under 40 CFR 261.7, the fuel cartridge is empty if the internal pressure of the container is equal to atmospheric pressure.

GREX takes no responsibility for proper fuel cartridge disposal. Proper disposal remains the responsibility of sellers and users of the fuel cartridges. All sellers and users are advised to contact their local solid waste authority to determine if any federal, state or local regulations prohibit or restricts disposal.

For more information about US EPA hazardous waste regulations, visit the official websites at:
http://www.epa.gov/epawaste/hazard/index.htm

Section 14 - Transportation Information

US DOT Information (Ground Shipment)

Shipping Name: Aerosols, LTD QTY
UN/NA #: 1950
Hazard Class: 2.1

Section 15 - Regulatory Information

US Federal Regulations

Component Analysis

None of this products' components are listed under
SARA Section 302 (40 CFR 355 Appendix A)
SARA Section 313 (40 CFR 372.65), or
CERCLA (40 CFR 302.4)

State Regulations

Component Analysis - State

None of this product's components are listed on the state lists from CA, MA, MN, NJ, PA, or RI.

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

A: General Product Information

GRAS List

The components of our propellants (propane, isobutane and normal butane) are listed on the **G**enerally **R**ecognized **A**s **S**afe (GRAS) List, Part 184, Sub-Part B, Sec. 184.1165 and 184.1655(Code of Federal Regulations).

Statement of Biodegradability

The degradation of the NGL propellants does not take place by way of biological organisms. These are gases at atmospheric pressure and ambient temperature and their atmospheric life is measured in a matter of days. The degradation of the NGL propellants is accomplished via photolysis.

B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Petroleum gases, liquefied	68476-86-8	Yes	DSL	EINECS

MATERIAL SAFETY DATA SHEET

Grex Cordless Fuel Cartridge

Section 16 - Other Information

The information contained in this material safety sheet is provided without warranty, expressed or implied, except that it is accurate to the best knowledge of Grex. The data on the sheet relates only to the Grex Cordless Fuel Cartridge. Grex assumes no legal responsibility for use or reliance upon these data.