

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Cordless Fuel Cell
CHEMICAL FAMILY: Hydrocarbons
CHEMICAL NAME: Compressed, extremely flammable, liquefied gas
MANUFACTURER: Paslode
888 Forest Edge Drive
Vernon Hills, Illinois 60061-3105

INFORMATION TELEPHONE NUMBER: 847-634-1900
EMERGENCY TELEPHONE NUMBER: 800-424-9300 (CHEMTREC)

2. COMPOSITION / INFORMATION ON INGREDIENTS (fuel and propellant)

HAZARDOUS INGREDIENTS	CAS NUMBER	CONCENTRATION (% by weight)
1-butene (butylene)	106-98-9	25-80
propene (propylene)	115-07-1	20-75

EU CLASSIFICATION:

F+, R12 - Extremely flammable.

EU RISK AND SAFETY PHRASES:

R12 - Extremely flammable.
S2 - Keep out of the reach of children.
S9 - Keep container in a well-ventilated place.
S16 - Keep away from sources of ignition - No smoking.
S33 - Take precautionary measures against static discharges.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Self-pressurized container of extremely flammable, liquified gas.
Storage at temperatures above 120°F may create a fire hazard.

PRIMARY ROUTES OF ENTRY: Respiratory system, eyes and skin.

POTENTIAL HEALTH EFFECTS

EYE CONTACT: Direct contact with liquefied gas can result in frostbite ("cold burn").
SKIN CONTACT: Exposure to expanding gas or vaporizing liquid may cause frostbite.
INGESTION: Exposure to expanding gas or vaporizing liquid may cause frostbite to internal organs and tissue. Ingestion not anticipated since components of fuel gas and propellant are gaseous at ambient pressure and temperature.
INHALATION: May cause asphyxiation in high concentrations. Repeated or prolonged inhalation may cause toxic effects. See MSDS Section 11 for more information.

4. FIRST AID MEASURES

EYE: Immediately flush eyes with plenty of water. Get immediate medical attention.
SKIN: In case of frostbite, do not remove clothes. Get immediate medical attention.
INGESTION: Get immediate medical attention.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

5. FIRE FIGHTING MEASURES**FLASH POINT:** approximately -160°F**FLAMMABILITY LIMITS (% in air by volume):** approximately 2 to 10**EXTINGUISHING MEDIA:** dry chemical; carbon dioxide; foam; water**SPECIAL FIRE FIGHTING PROCEDURES:** Fuel cells may release contents if not sufficiently cooled with water spray. Isolate hazard area and evacuate unprotected personnel. Full emergency equipment with self contained breathing apparatus and full protective clothing should be worn by firefighters.**6. ACCIDENTAL RELEASE MEASURES****SPILL OR LEAK PROCEDURES:** Eliminate sources of ignition.
Isolate hazard area.
Ventilate hazard area.**7. HANDLING AND STORAGE****RECOMMENDED STORAGE TEMPERATURE:** Below 120°F**SHELF LIFE:** For maximum number of tool cycles, use before date code on fuel cell.**HANDLING AND STORAGE PRECAUTIONS:** In addition to limitations on storage temperature, fuel cells should be handled and stored so as to avoid puncture. Even after use, do not puncture fuel cell or expose fuel cell to high temperature. Do not attempt to refill the fuel cell.**8. EXPOSURE CONTROL/PERSONAL PROTECTION****EYE PROTECTION REQUIREMENTS:**

Eye protection must be worn when handling fuel cells.

SKIN PROTECTION REQUIREMENTS:

Gloves are recommended when handling fuel cells.

RESPIRATORY/VENTILATION REQUIREMENTS:

Use in a well ventilated environment.

EXPOSURE LIMITS:**OSHA PEL****ACGIH**

(ppm)

(ppm)

1-butene (butylene)

NE

NE

propene (propylene)

NE

NE

9. PHYSICAL AND CHEMICAL PROPERTIES (fuel and propellant)**PHYSICAL FORM:**

liquified gas

COLOR:

colorless

ODOR:

faintly olefinic

BOILING POINT:

approximately -50°F

MELT POINT/FREEZE POINT:

approximately -300°F

pH:

not applicable

SOLUBILITY IN WATER:

slightly

SPECIFIC GRAVITY:

approximately 0.6 for liquefied gas

% VOLATILE BY WEIGHT:

100%

VAPOR PRESSURE:approximately 50 - 150 lb/in² at 70°F**VAPOR DENSITY:**

approximately 1.5 (air = 1)

10. REACTIVITY

STABILITY: Product is stable.
HAZARDOUS POLYMERIZATION: Will not occur.
INCOMPATIBILITIES: Oxidizing agents, halogens and acids.
DECOMPOSITION PRODUCTS: Thermal decomposition or burning may produce carbon monoxide or carbon dioxide from fuel gas combustion.

11. TOXICOLOGICAL INFORMATION

ACUTE INHALATION: Low toxicity - LC50 > 5 mg/L (rat). Components of fuel cell gases and propellant are simple asphyxiants. Exposure to high concentrations of propylene has been associated with irregular heartbeat.

CHRONIC INHALATION: No significant effects have been demonstrated for any components except propylene. Chronic exposure to propylene has been associated with liver damage.

ACUTE EYE OR SKIN CONTACT: Frostbite ("cold burn") can result from exposure to expanding gas or vaporizing liquid. Components of fuel cell gas and propellant at ambient pressure and temperature produce little or no irritation.

CHRONIC EYE OR SKIN CONTACT: No significant effects have been demonstrated for components of fuel cell gas and propellant at ambient pressure and temperature.

CARCINOGENICITY: No components of fuel cell gas or propellant are classified as carcinogens by IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological and environmental fate data have not been determined specifically for this product. Information is based on International Uniform Chemical Information Database (IUCLID) entries for components of fuel cell gas and propellant.

ECOTOXICOLOGICAL INFORMATION: Anaesthetic to animals and insects at high concentrations. Not expected to pose hazards to aquatic life. Not inhibitory to plant growth at ambient concentrations. Bioaccumulation is not expected.

ENVIRONMENTAL FATE INFORMATION: Volatilization is expected to be primary fate process. Components of fuel cell gas and propellant have photochemical reactivity.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Waste must be disposed of in accordance with federal, state and local environmental regulations. See RCRA discussion in MSDS Section 15.

14. TRANSPORT INFORMATION**U.S. DOT INFORMATION***

PROPER SHIPPING NAME: Consumer Commodity

HAZARD CLASS: ORM-D **PRODUCT RQ (lbs):** none

UN NUMBER: none **LABEL:** none

* Above description is for domestic (U.S.) ground transportation of fuel cells only. Information must be determined for shipment by any other mode or authority.

15. REGULATORY INFORMATION**TSCA STATUS:** All components are included in the TSCA Chemical Inventory.**CERCLA REPORTABLE QUANTITY:** none**SARA TITLE III:****SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES:** none**SECTION 311/312 HAZARD CATEGORIES:**

Acute Health	yes
Chronic Health	yes
Fire	yes
Reactive	no
Sudden Release of Pressure	yes

SECTION 313 TOXIC CHEMICALS: propene (propylene) CAS No. 115-07-1
20-75% by weight**RCRA STATUS:** If discarded in its purchased form, this product may be classified as a D001 (ignitable) hazardous waste. Even after use, the fuel cell remains pressurized by an extremely flammable propellant and may retain these hazardous waste characteristics. Waste generators must consider federal, state and local hazardous waste regulations to determine a proper disposal method based on their status as a conditionally exempt, small quantity or large quantity generator.**CANADIAN STATUS:** All components listed on Domestic Substances List (DSL).**EUROPEAN UNION:** All components listed on European Inventory of Existing Commercial Chemical Substances (EINECS):

<u>Component</u>	<u>EINECS No.</u>
1-butene	203-449-2
propene	204-062-1

STATE REGULATORY INFORMATION: No component of fuel gas or propellant is included on California Proposition 65 lists as a carcinogen or reproductive toxin.**16. OTHER INFORMATION****HMIS CLASSIFICATION:**

Health	1
Flammability	4
Reactivity	0
PPE	*

REASON FOR ISSUE: Modify chemical names (1-butene, propene).**PREPARED BY:** Ken Brown, CHMM**ISSUE DATE:** 1/20/08**SUPERCEDES VERSION DATED:** 1/11/2005

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