SAFETY DATA SHEET
Fuelcell 30ml, 40ml, 60ml, 70ml

Date of issue: 10/29/2019

Section 1: Identification

1.1 Product Identification

Product Identifier:	**Fuelcell 30ml, 40ml, 60ml, 70ml**
Recommended Use:	Fuel cell for cordless nailers

1.2 Company Identification

Company:	Grabber Construction Products Inc.
Address:	5255 North 11000 West Highland, Utah 84003
Phone:	1-801-492-3880
Website:	www.grabberman.com
Emergency:	
Chemtrec (24 Hour)	800-424-9300
Chemtrec (International)	703-527-3887

For most current SDS, please visit our website at http://www.grabberman.com/technicaldata.aspx

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

GHS US classification

Simple Asphyxiant	May displace oxygen and cause rapid suffocation
Flammable aerosol Category 1	H222 Extremely flammable aerosol

Full text of H statements: see section 16

2.2 GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)	
Signal word (GHS US)	Danger
Hazard statements (GHS US)	H222 - Extremely flammable aerosol May displace oxygen and cause rapid suffocation
Precautionary statements (GHS US)	P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking. P211 - Do not spray on an open flame or other ignition source. P251 - Pressurized container: Do not pierce or burn, even after use. P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

2.3 Other hazards which do not result in classification

No additional information available

2.4 Unknown acute toxicity (GHS US)

Not applicable

Section 3: Composition Information

3.1 Substances

Not Applicable

3.2 Mixture

Name	Product identifier	%	GHS US classification
but-1-ene	(CAS-No.) 106-98-9	0-80	Flam. Gas 1, H220
propene, propylene	(CAS-No.) 115-07-1	20-100	Flam. Gas 1, H220
butane	(CAS-No.) 106-97-8	0-20	Flam. Gas 1, H220
propane	(CAS-No.) 74-98-6	0-20	Flam. Gas 1, H220
isobutane	(CAS-No.) 75-28-5	0-20	Flam. Gas 1, H220

Section 4: First-Aid Measures

4.1 Description of first aid measures

First-aid measures general: In all cases of doubt, or when symptoms persist, seek medical attention. Refrigerated liquefied gas. Contact with product may cause cold burns or frostbite. In case of loss of conscience place the victim in the recovery position.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.

First-aid measures after skin contact: Wash skin with plenty of water. Thaw frosted parts with lukewarm water. Do not rub affected area. Do not remove clothing if it sticks to the skin. If symptoms persist, call a physician.

First-aid measures after eye contact: Rinse eyes with water as a precaution. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion: Ingestion unlikely. Call a poison center/doctor/physician if you feel unwell.

4.2 Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation: In case of inhalation of high concentrations: Shortness of breath. Headache. nausea, vomiting. Giddiness. Dizziness.

Symptoms/effects after skin contact: Contact with the liquefied gas may cause frostbite.

4.3 Immediate medical attention and special treatment, if necessary

Treat sypmtomatically

Section 5: Fire-Fighting Measures

5.1 Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media: Water.

5.2 Specific hazard arising from the chemical

Fire hazard: Extremely flammable aerosol.

Explosion hazard: Pressurized container: may burst if heated. Explosive vapor/air mixtures may be formed.

5.3 Special protective equipment and precautions for fire-fighters

Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Other information: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Do not allow run-off from fire-fighting to enter drains or water courses. Disposal must be done according to official regulations.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment, and emergency procedures

General measures	Prohibit unauthorized persons. Shelter from vapors by keeping upwind. Remove ignition sources. Do not breathe gas/vapor/aerosol.
For non-emergency personnel	
Protective equipment	Wear personal protective equipment.
Emergency procedures	Ventilate spillage area. No open flames, no sparks, and no smoking.
For emergency responders	
Protective equipment	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	If possible, allow spill to evaporate under surveillance. Ensure adequate air ventilation.
Other information	Disposal must be done according to official regulations.

6.4 Reference to other sections

Information for safe handling. See section 7. Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Precautions for safe handling	Ensure good ventilation of the work station. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Take precautionary measures against static discharge.
Hygiene measures	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store in a well-ventilated place. Keep cool.
Incompatible materials	Some plastics.
Storage temperature	<40 °C
Information about storage in one common storage facility	Keep away from food, drink and animal feeding stuffs. Strong oxidizing agent.

Section 8: Exposure Controls/Personal Protection

8.1 Control Parameters

propane (74-98-6)		
ACGIH	Local name	Propane
ACGIH	Remark (ACGIH)	TLV® Basis: Simple Asphyxiant
ACGIH	Regulatory reference	ACGIH 2019
OSHA	OSAH PEL (TWA) (mg/m3)	1800 mg/m3
OSHA	OSAH PEL (TWA) (ppm)	1000 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
butane (106-97-8)		

ACGIH	Local name	Butane
ACGIH	ACGIH STEL (ppm)	1000 ppm (EX – Explosion hazard)
ACGIH	Remark (ACGIH)	TLV® Basis: CNS impair
ACGIH	Regulatory reference	ACGIH 2019
isobutane (75-28-5)		
ACGIH	Local name	Isobutane
ACGIH	ACGIH STEL (ppm)	1000 ppm (EX – Explosion hazard)
ACGIH	Remark (ACGIH)	TLV® Basis: CNS impair
ACGIH	Regulatory reference	ACGIH 2019
but-1-ene (106-98-9)		
ACGIH	Local name	n-Butene
ACGIH	ACGIH TWA (ppm)	250 ppm
ACGIH	Remark (ACGIH)	TLV® Basis: Body weight eff
ACGIH	Regulatory reference	ACGIH 2019
propene, propylene (115-07-1)		
ACGIH	Local name	Propylene
ACGIH	ACGIH TWA (ppm)	550 ppm
ACGIH	Remark (ACGIH)	TLV® Basis: Asphyxia; URT irr. Notations: A4 (Not classifiable as a Human Carcinogen)
ACGIH	Regulatory reference	ACGIH 2019

8.2 Appropriate Engineering Controls

Appropriate engineering controls	Ensure good ventilation of the work station.

8.3 Individual protection measures/Personal protective equipment

Personal protective equipment	Avoid contact with skin and eyes
Hand protection	Chemically resistant protective gloves. Nitrile rubber. EN 374. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Gloves must be replaced after each use and whenever signs of wear or perforation appear.
Eye protection	Safety glasses. EN 166
Skin and body protection	Wear suitable protective clothing. EN 340
Respiratory protection	Do not breathe gas/vapor/aerosol. In case of insufficient ventilation, wear suitable respiratory equipment. EN 143. breathing apparatus with filter. Filter type: Filter AX (brown)
Other information	Wash hands before breaks and after work.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aerosol
Color	colorless
Odor	characteristic
Odor threshold	No data available
pH	No data available
Melting point	Not applicable
Freezing point	No data available

Boiling point	Aerosol | Not applicable
Flash point	Aerosol | Not applicable
Relative evaporation rate (butyl acetate=1)	No data available
Flammability (solid, gas)	Not applicable, Extremely flammable aerosol
Vapor pressure	No data available
Relative vapor density at 20 °C	No data available
Relative density	No data available
Solubility	Insoluble
Log Pow	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosion limits	No data available
Explosive properties	Pressurized container: may burst if heated. Spray.
Oxidizing properties	No data available

Section 10: Stability and Reactivity

10.1 Reactivity

Extremely flammable aerosol. Pressurized container: may burst if heated.

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Flammable or explosive vapor/air mixtures may be formed.

10.4 Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition. Do not expose to temperatures above <40° C. heat. Direct sunlight.

10.5 Incompatible materials

Strong oxidizing agent. Air or oxygen. Hydrochloric acid.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity (oral)	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified

butane (106-97-8)

LC50 inhalation rat (ppm)	> 800000 ppm/4h
ATE US (gases)	658 ppmV/4h
ATE US (dust, mist)	5.95 mg/l/4h
Skin corrosion/irritation	Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitization	Not classified (Based on available data, the classification criteria are not

	met)
Germ cell mutagenicity	Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity - single exposure	Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity - repeated exposure	Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	Not classified (Based on available data, the classification criteria are not met)
Viscosity, kinematic	No data available
Symptoms/effects after inhalation	In case of inhalation of high concentrations : Shortness of breath. Headache. nausea, vomiting. Giddiness. Dizziness.
Symptoms/effects after skin contact	Contact with the liquefied gas may cause frostbite.

Section 12: Ecological Information (non-mandatory)

12.1 Toxicity

isobutane (75-28-5)

LC50 fish 1	49.9 mg/l (96h;Quantitative structure-activity relationship (QSAR))
EC50 Daphnia 1	I 69.43 mg (48h, Daphnia magna; Quantitative structure-activity relationship (QSAR))

12.2 Persistence and degradability

No additional information available

12.3 Bioaccumulative potential

butane (106-97-8)	
Log Pow	2.89
isobutane (75-28-5)	
Log Pow	1.09 – 2.8 (20 °C; pH 7)
but-1-ene (106-98-9)	
Log Pow	2.4

12.4 Mobility in soil

No additional information available

12.5 Other adverse effects

No additional information available

Section 13: Disposal Considerations (non-mandatory)

13.1 Disposal methods

Waste treatment methods	Disposal must be done according to official regulations. Do not dispose of with domestic waste. Do not discharge into drains or the environment.
Product/Packaging disposal recommendations	Disposal must be done according to official regulations.

Section 14: Transport Information (non-mandatory)

Department of Transportation (DOT)

In accordance with DOT	UN1950 Aerosols, 2.1

Transport document description	UN1950
UN-No.(DOT)	Aerosols
Proper Shipping Name (DOT)	2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
Class (DOT)	2.1 - Flammable gas
Hazard labels (DOT)	UN1950 Aerosols, 2.1

DOT Packaging Non Bulk (49 CFR 173.xxx)	None
DOT Packaging Bulk (49 CFR 173.xxx)	None
DOT Special Provisions (49 CFR 172.102)	N82 - See 173.306 of this subchapter for classification criteria for flammable aerosols.
DOT Packaging Exceptions (49 CFR 173.xxx)	306
DOT Quantity Limitations Passenger aircraft/rail	75 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	150 kg
DOT Vessel Stowage Location	A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	25 - Protected from sources of heat,87 - Stow "separated from" Class 1 (explosives) except Division 14,126 - Segregation same as for Class 9, miscellaneous hazardous materials
Emergency Response Guide (ERG) Number	126
Other information	No supplementary information available.

Transportation of Dangerous Goods

Transport document description	UN1950 AEROSOLS, 2.1
UN-No. (TOG)	UN1950
Proper Shipping Name (Transportation of Dangerous Goods)	AEROSOLS
TOG Primary Hazard Classes	2.1 - Class 2.1 - Flammable Gas.
TOG Special Provisions	Provisions and Special Cases, a person must not offer for transport or transport these dangerous goods unless they are in a means of containment that is in compliance with section 5.11 of Part 5, Means of Containment, except that the requirement for aerosol containers to be tightly packed in a wood, fibreboard or plastic box does not apply to a user or purchaser who transports no more than six aerosol containers. For a similar rule respecting aerosol containers, see subparagraph 1.15(1)(a)(i) of Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases. SOR/2012-245, 107 - (1) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2, (Classification), do not apply to the handling, offering for transport or transporting of UN1950, AEROSOLS, and UN2037, GAS CARTRIDGES, that contain dangerous goods included in Class 2.1 or Class 2.2 and that are transported on a

	road vehicle, a railway vehicle or a ship on a domestic voyage, if the aerosols or gas cartridges have a capacity less than or equal to 50 ml. (2) Subsection (1) does not apply to self-defense spray. SOR/2014-306
Explosive Limit and Limited Quantity Index	1 L
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	75 L
Transport by sea	
Transport document description (IMDG)	UN 1950 AEROSOLS, 2.1
UN-No. (IMDG)	1950
Proper Shipping Name (IMDG)	AEROSOLS
Class (IMDG)	2 - Gases
Air transport	
Transport document description (IATA)	UN 1950 Aerosols, flammable, 2.1
UN-No. (IATA)	1950
Proper Shipping Name (IATA)	Aerosols, flammable
Class (IATA)	2

Section 15: Regulatory Information

15.1 United States Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

propene, propylene	CAS-No. 115-07-1	20-100%

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2 International regulations

15.3 US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm.

Component	State or local regulations
but-1-ene(106-98-9)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List

Section 16: Other Information

Date prepared or revised	October 2019
Data sources	Information provided by the manufacturer
Department issuing data specification sheet:	KFT Chemieservice GmbH Im Leuschnerpark. 3 64347 Griesheim Postfach 1451 64345 Griesheim Germany Phone: +49 6155-8981-400 Fax: +49 6155 8981-500 Safety Data Sheet Service: +49 6155 8981-522
Contact person	Dr. Sonja Fischer
Other information	Version/s 1.00 - 2.00 is/are not available in this language.

Full text of H-phrases:

H220	Extremely flammable gas
H222	Extremely flammable aerosol

Abbreviations

AON	European Agreement concerning the International Carriage of Dangerous Goods by Inland
ACGIH:	American Conference of Governmental Industrial Hygienists
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No. 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No. 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

Disclaimer

This Safety Data Sheet (SDS) is prepared by Grabber Construction Products Inc. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product