

SAFETY DATA SHEET

in accordance the Commission Regulation (EU) No. 830/2015 of 28 May 2015 amending the Regulation (EC) No. 1907/2006 of the European Parliament and Council dated December 18th, 2006 on Registration, Evaluation, Authorization and Restrictions of Chemicals (REACH) (DU European Union series L No. 132/8 of May 29st, 2015)

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1 SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1 **Product identifier**
Gas fuel cell TGC-165S
- 1.2 **Relevant identified uses of the substance or mixture and uses advised against**
Identified uses: Gas cartridges for nail guns
Uses advised against: Every way of using not mentioned above or in the point 7.3.
- 1.3 **Details of the supplier of the safety data sheet**
Trutek Fasteners Polska Sp. z o.o.
Al. Krakowska 38, Janki
05-090 Raszyn, Poland
- 1.4 **Emergency telephone number**
Nationwide emergency telephones (Mon-Fri 8:00 - 16:00): +48 22 701 93 25
112 (emergency call)

2 SECTION 2: HAZARDS IDENTIFICATION

- 2.1 **Classification of the substance or mixture**
Classification according to Regulation (EC) No 1272/2008
Physical and chemical hazards:
Flammable aerosols, Hazard Category 1 [Aerosol 1]
Extremely flammable aerosol. Pressurised container: May burst if heated (H222-H229)
Health hazards
This mixture does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 2 and 11).
Environmental hazards:
This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.
- 2.2 **Label elements**
Labelling according Regulation (EC) No 1272/2008
Pictogram



GHS02

Signal word: DANGER

Hazard statement(s)

H222 Extremely flammable aerosol

H229 Pressurised container: May burst if heated

Precautionary statement(s):

Prevention:

P102 Keep out of reach of children.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

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P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use

Storage:

P410+P412 Protect from sunlight. Do no expose to temperatures exceeding 50 o C/122 o F

2.3 Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) $\geq 0.1\%$ published by the European Chemicals Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu>. The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

3 SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Not applicable

3.2 Mixtures:

Substance identifier	Name of the substance	Weight fraction %	Classification in line with The Regulation (EC) No. 1272/2008		
			Signal Word Code(s)	Hazard Class and Category Code(s)	Hazard Statement Code(s)
CAS: 68476-85-7 WE (EINECS): 270-704-2 Index: 649-202-00-6 Reach: Exempt under REACH in accordance with Article 2(7)(b)	Petroleum gas, liquefied [1] **	<80	GHS05 Dgr	Extremely Flam. Gas: Press. Gas:	H220 H280

¹Substance with national [PL] exposure limit in the workplace

** [A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C3 through C7 and boiling in the range of approximately – 40 °C to 80 °C (– 40 °F to 176 °F).]

Full H phrases are specified in point 16 hereof.

4 SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Skin contact:

In the event of frostbite, slowly warm the exposed area by rinsing with warm water. Otherwise obtain medical treatment immediately. Contaminated clothing may be a fire hazard and therefore should be soaked with water before being removed. Loosen tight clothing. Keep warm and at rest.

Eye contact:

DO NOT DELAY. Obtain medical treatment immediately. Remove contact lenses if present and easy to do so. Continue rinsing. Flush eye with copious quantities of water. Exposure by this route does not typically occur. If swallowed, rinse mouth with water. Do not induce vomiting! Never give anything by mouth to an unconscious person. Consult a doctor –show label.

Ingestion:

Inhalation:

Remove to fresh air. Keep warm and calm. Consult a doctor, if symptoms persist. Perform artificial respiration or give oxygen if needed. Consult a doctor, if disturbing symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

Skin contact:

Defatting, burning sensation, redness, may cause skin dryness or cracking after repeated exposure, frostbite by spraying the skin spray at close range, irritation.

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Eye contact: Irritation, burning sensation, redness, tearing
Ingestion: May cause irritation of the mucous membranes of gastrointestinal tract, nausea, vomiting.
Inhalation: Possible irritation of the mucous membranes of respiratory system, cough, drowsiness and dizziness, headaches.

4.3 Indication of any immediate medical attention and special treatment needed

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured. Treat symptomatically

5 SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Foam, powder, carbon dioxide, water in spray.

Unsuitable extinguishing media:

Jet water.

5.2 Special hazards arising from the substance or mixture

Under fire conditions product may produce harmful gases consisting of carbon oxides and other unidentified thermal decomposition products. Do not inhale combustion products, may cause health risk.

5.3 Advice for firefighters

Personal protection typical in case of fire. Do not stay in the fire zone without self-contained breathing apparatus and protective clothing resistant to chemicals. Do not allow extinguishing water to enter drains, surface water and groundwater. Gas can accumulate on the surface of the ground and move along distances creating a risk of fire or explosion. Cool containers at risk of fire from a safe distance with water spray. Pressurized container - danger of leaks, or even an explosion at a high temperature. Collect used extinguishing media.

6 SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. Ensure that the effects of breakdown are removed only by trained personnel. In case of large spills, isolate the exposed area. Avoid eyes and skin contamination. Do not inhale aerosol. Ensure adequate ventilation. Wear adequate personal protective equipment. Remove all sources of ignition, do not use open flames or sparking tools. Prohibit smoking.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Collect damaged container mechanically. Absorb leakage with incombustible liquid-binding material (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to appropriate waste disposal containers. Clean contaminated surface. Do not use sparking tools, do not smoke. Treat the collected material as waste

6.4 Reference to other sections

Appropriate conduct with waste product – section 13.

Personal protection equipment – section 8.

7 SECTION 7: HANDLING AND STORAGE

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7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Avoid contact with skin and eyes. Do not inhale aerosol. Ensure adequate general and/or local ventilation. Eliminate sources of ignition - do not use open flames, do not smoke, do not use sparking tools and clothing from fabric susceptible to electrification; protect containers from heating. Do not spray on a naked flame or any incandescent material. Protect against electrostatic charges

7.2 Conditions for safe storage, including any incompatibilities

Store only in a cool, dry place. Keep aerosols away from sources of ignition or ambient temperatures above 50 ° Celsius. Keep away from sources of ignition and heat. Do not smoke, use open flame and sparking devices in a warehouse. Do not pierce or burn packaging even after use. Keep away from food, foodstuffs and animal feed. Avoid contact with strong oxidizing agents - contact may cause ignition. Avoid contact with steel corrosive agents - the risk of damage of the containers and the release of aerosols content.

7.3 Specific end use(s)

No information about uses other than mentioned in subsection 1.2

8 SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

PL: Buta-1,3-diene [106-99-0]			
NDS		4,4 mg/m³	
GB: Butene [106-97-8] [EH40/2005]			
TWA (8h)		STEL (15 minute)	
mg/m³	ppm	mg/m³	ppm
1450	600	1810	750
PL: Butane 106-97-8			
NDS		1900 mg/m³	
NDSch		3000 mg/m³	
GB: Propan-2-ol [67-63-0] [EH40/2005]			
TWA (8h)		STEL (15 minute)	
mg/m³	ppm	mg/m³	ppm
999	400	1250	500
PL: Propane [74-98-6]			
NDS		1800 mg/m³	

Legal basis:

The Regulation of the Minister of Labour and Social Policy of June 12th, 2018 on maximal authorised concentrations and intensity of factors harmful to health in work environment (Dz. U. 2018 poz.1286)

The Regulation of the Minister of Health of 2 February 2011. On tests and measurements of health hazard factors in the work environment (Dz. U. No. 33, item. 166, 2011).

The Regulation of the Minister of Health of 30 December 2004. On occupational health and safety related to occurrence of chemical agents at work (Dz. U. No. 11, pos. 86, 2005).

EH40/2005 Workplace exposure limits Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002 (as amended)

TWA/STEL

Information unavailable.

DNEL/PNEC:

Information unavailable.

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Recommended monitoring procedures

Monitoring procedures should be used for concentrations of hazardous components in the air. Air quality control procedures should be used in the workplace - as long as they are available and reasonable for the job - in accordance with the relevant Polish or European Standards, taking into account the conditions prevailing at the site of exposure and corresponding measurement methodologies adapted to the conditions work. Mode, type and frequency of tests and measurements should meet the requirements of the Regulation of the Minister of Health on 2 February 2011. (Dz. U. 2011 No. 33, item. 166).

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Necessary local and general ventilation. Ventilation inlets close to working area or below. General ventilation outlets in upper and lower parts of premises. In case of poor ventilation, use respiratory system protection. Showers and places to rinse eyes must be ensured.

Warning:

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator.

8.2.2 Individual protection measures, such as personal protective equipment

Eye protection :	No special equipment for minor exposure i.e. when handling small quantities. OTHERWISE: For potentially moderate or heavy exposures: Safety glasses with side-shields. Wear face-shield and protective suit for abnormal processing problems.
Hand protection:	No special equipment needed when handling small quantities. OTHERWISE: For potentially moderate exposures: Recommended glove material: nitrile rubber, minimum breakthrough time: 120 minutes, minimum thickness: 0.4 mm. Consider the hazard characteristics of this product and any special workplace conditions when selecting the appropriate type of protective gloves. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin and body protection :	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection :	Under normal conditions of use is not required. In case of insufficient ventilation, wear an approved respirator with a filter of AX type. Use breathing apparatus with independent air supply in case of: working in a confined space, insufficient amount of oxygen in the air, a large uncontrolled emissions or other circumstances when the mask with the filter does not give a sufficient protection

Hygiene at work: Apply general hygiene at work rules. After work, remove contaminated clothes and wash thoroughly the whole body. Wash your hands and face during breaks. Restrain from drinking and eating or smoking at work.

9 SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Colorless aerosol
Odour	Odorless
Smell threshold	Information unavailable
pH	Information unavailable
Melting/ clotting point	Information unavailable

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Initial boiling point and boiling range	Depending on the proportion of ingredients in the product from -45oC (propane) to -0,5oC
Flash point	-40oC (butane); -104oC (propane)
Evaporation rate	Information unavailable.
Flammability	Extremely flammable aerosol.
Upper/lower flammability or explosive limits;	1,5-11
Vapour pressure	Propane < 31000 hPa w temp. 70oC
Vapour density	Information unavailable
Relative density	Information unavailable
Solubility	Insoluble in water
Partition coefficient: n-octanol/water	Information unavailable.
Auto-ignition temperature	>365oC
Decomposition temperature	Information unavailable.
Viscosity	Information unavailable
Explosive properties	The product may form explosive mixture in air.
Oxidising properties	Not oxidising.
9.2 Other information	
Surface tension at 20 °C:	Non applicable
Refraction index:	Non applicable

10 SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No reactivity under recommended storage and handling conditions.

10.2 Chemical stability

Stable under recommended storage and usage conditions.

10.3 Possibility of hazardous reactions

Explosive hazard possible in contact with air. Mixture could react with oxidisers.

10.4 Conditions to avoid

Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C. Keep away from open flames, hot surfaces, and sources of ignition.

10.5 Incompatible materials

Strong oxidizers

10.6 Hazardous decomposition products

Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds. Reference to other sections: 5.2.

11 SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

The experimental information related to the toxicological properties of the product itself is not available

Petroleum gases, liquefied, are not classified for acute toxicity, irrespective of the route of administration. Being in the vapors of a propellant with high concentration may cause nausea, headaches and dizziness, in extreme cases leading to unconsciousness

Acute toxicity of product:

Irritation/ corrosivity:

Skin: Based on available information, classification criteria are not met.

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Eyes: Based on available information, classification criteria are not met.

Respiratory or skin sensitisation

Based on available information, classification criteria are not met.

Germ cell mutagenicity

Based on available information, classification criteria are not met.

Carcinogenicity

Based on available information, classification criteria are not met.

Reproductive toxicity

Based on available information, classification criteria are not met.

Specific target organ toxicity - single exposure

Based on available information, classification criteria are not met.

Specific target organ toxicity - repeated exposure

Based on available information, classification criteria are not met.

Aspiration hazard

Based on available information, classification criteria are not met.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin contact: defatting, burning sensation, redness, may cause skin dryness or cracking after repeated exposure, frostbite by spraying the skin spray at close range, irritation.

Eye contact: irritation, burning sensation, redness, tearing.

Ingestion: may cause irritation of the mucous membranes of gastrointestinal tract, nausea, vomiting

Inhalation: possible irritation of the mucous membranes of respiratory system, cough, drowsiness and dizziness, headaches.

12 SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity of product

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use

Do not leave the product, even diluted or in great quantity, penetrate the ground water, water or the drains.

In order to minimise long term global pollution consideration should be given to:

- Reduction in consumption of disposable products and packaging.
- Participation in recycling activities

Toxicity of components

Mixture: n- Butane, Propane, Isobutene

LC50/96 h Oncorhynchus mykiss > 24,11 mg/l

EC50/48 h Daphnia magna > 14,22 mg/l

EC50/72 h Pseudokirchnerella subcapitata > 7,71 mg/l

12.2 Persistence and degradability

For mixtures not specified

12.3 Bioaccumulative potential

For mixtures not specified

Bioconcentration factor (BCF): no data available for the mixture.

Propane: 9 - 25

Isobutane: 20 - 52

12.4 Mobility in soil

Product is mobile in water and soil. Gaseous components quickly spread in atmosphere. The mobility of the substance depends on their hydrophilic and hydrophobic properties and abiotic and biotic conditions of soil, including its structures, climatic conditions, seasons (in Poland, in a variable moderate climate) and soil organisms, mainly (bacteria, fungi, algae, invertebrates).

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12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

The mixture is not classified as hazardous to the ozone layer. There should be considered the possibility of other harmful effects of the individual components of the mixture on the environment. (eg. the ability of disrupting endocrine , the impact of global warming potential).

13 SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Make sure containers are empty before discarding (explosion risk). Do not puncture or incinerate even when empty. This material and its container must be disposed of in a safe way. Dispose of waste and residues in accordance with local authority requirements. Recover and reclaim or recycle, if practical.

waste codes

16 05 04* gases in pressure containers (including halons) containing dangerous substances

15 01 10*packaging containing residues of or contaminated by dangerous substances

14 SECTION 14: TRANSPORT INFORMATION



14.1 UN number

UN 1950

14.2 UN proper shipping name

AEROSOLS, flammable

14.3 Transport hazard class (es)

2 (label 2.1)

Classification Code: 5F

14.4 Packing group

Not applicable. Limited quantities 1L.

14.5 Environmental hazards

Mixture is not hazardous for the environment according to the criteria of transport regulations

14.6 Special precautions for user

ADR

Tunnel restriction code: D

Transport category: 2 – limited 333 kg

Limited Quantity: 1 L

Packing instructions: ADR: P207, LP200

Warning:

Aerosol dispensers shall be provided with protection against inadvertent discharge. Aerosols with a capacity not exceeding 50 ml containing only non-toxic constituents are not subject to these Regulations.

Packages containing these articles shall be clearly marked as follows: "UN 1950 AEROSOLS"

Packages shall not be thrown or subjected to impact. Receptacles shall be so stowed in the vehicle or container that they cannot overturn or fall.

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14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15 SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Other legislation:

1. **1272/2008/EC** of the Regulation of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures - amending and repealing Directive 67/548/EEC and 1999/45/EC, and Regulation (EC) No 1907/2006.
2. **2018/669/UE** Commission Regulation (EU) 2018/669 of 16 April 2018 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures Text with EEA relevance.
3. **790/2009/EC** of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures.
4. **2008/98/EC** Directive of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives
5. **94/62/EC** Commission Directive 2013/2/EU of 7 February 2013;amending Annex I to Directive 94/62/EC of the European Parliament and of the Council on packaging and packaging waste
6. **2015/830/EU** Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

15.2 Chemical safety assessment

The supplier has not assessed chemical safety It is not required for the mixture.

16 SECTION 16: OTHER INFORMATION

Key literature references and sources for data

Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

Regulation (EC) No. 1272/2008 (CLP, EU GHS)

Dangerous Goods Regulations (DGR) for the air transport (IATA)

International Maritime Dangerous Goods Code (IMDG)

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Safety Data Sheet made by: Małgorzata **Feed Reach Consulting**. www.frc.com.pl

H (hazard) phrases specified in point 2 and 3 hereof:

H220	Extremely flammable gas
Flam. Gas 1	Flammable gases, Hazard Category 1
H280	Contains gas under pressure; may explode if heated.

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Press Gas	Flammable gas category 1
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Explanation of returns

CEN	European Committee for Standardisation
C&L	Classification and Labelling
CLP	Classification Labelling Packaging Regulation ; Regulation (EC) No 1272/2008
CAS	Chemical Abstracts Service number
COM	European Commission
CMR	Carcinogen, Mutagen, or Reproductive Toxicant
CSA	Chemical Safety Assessment
CSR C	Chemical Safety Report
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
DPD	Dangerous Preparation Directive 1999/45/EEC
DSD	Dangerous Substances Directive 67/548/EEC
EC	European Commission
EC ₅₀	Half maximal effective concentration
ECB	European Chemicals Bureau Europejskie
ECHA	European Chemicals Agency
EC	Number EINECS and ELINCS Number (see also EINECS and ELINCS)
EINECS	European Inventory of Existing Commercial Substances
ELINCS	European List of notified Chemical Substances
EN	European Standard
EU	European Union
GHS	Globally Harmonized System
IC ₅₀	Half maximal inhibitory concentration
IUCLID	International Uniform Chemical Information Database
IUPAC	International Union for Pure Applied Chemistry
LC ₅₀	Lethal concentration, 50 %
LD ₅₀	Median Lethal Dose
MSDS	Material Safety Data Sheet
PBT	Persistent, Bioaccumulative and Toxic substance
PEC	PEC Predicted Effect Concentration
PNEC(s)	Predicted No Effect Concentration(s)
PPE	Personal Protection Equipment
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	Safety Data Sheet
SIEF	Substance Information Exchange Forum
STOT	Specific Target Organ Toxicity
(STOT) RE	Repeated Exposure
(STOT) SE	Single Exposure
SVHC	Substances of Very High Concern
vPvB	Very Persistent and Very Bioaccumulative

Training

Prior to working with the product you should be familiar with safety rules for handling the chemicals, in particular take proper workplace training.

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People associated with the transport of hazardous materials in accordance with ADR should be adequately trained to perform their duties (general training, bench and safety).

Changes in sections: 8,15