

## SAFETY DATA SHEET

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

- 1.1. Product identifier  
**52515 Spezialgas AT 3000**
- CAS No: 68476-40-4  
EU number: 270-681-9  
Index number: 649-199-00-1  
REACH registration number: not available. LPG is exempted from the registration requirements of Annex V of the REACH Regulation (1907/2006/EC).
- 1.2. Relevant identified uses of the substance or mixture and uses advised against:  
LPGs are used for various purposes, the most common are: fuels for household, industrial, agricultural use, fuels for combustion engines, petrochemicals, fuels, swelling agents, refrigerants.
- 1.3. Details of the supplier of the safety data sheet:  
**CFH Löt- und Gasgeräte GmbH**  
Bahnhofstr. 50  
D-74254 Offenau  
Tel.: +49 7136 9594-0  
Fax: +49 7136 9594-44
- 1.3.1. Responsible person: Torsten Bogesch  
E-mail: bogesch.torsten@cfh-gmbh.de
- 1.4. Emergency telephone number: National Poisons Information Service: 844 892 0111

### SECTION 2: HAZARDS IDENTIFICATION

- 2.1. Classification of the substance or mixture

Classification according to CLP regulation:

Press. Gas  
Flamm. Gas  
Carc. 1B\*  
Muta. 1B\*



#### H statements:

**H220** – Extremely flammable gas.

**H280** – Contains gas under pressure; may explode if heated.

#### P statements:

**P102** – Keep out of reach of children.

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

**P410 + P403** – Protect from sunlight. Store in a well-ventilated place.

**P377** – Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

**P381** – Eliminate all ignition sources if safe to do so.

Note K : The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w 1,3-butadiene (EINECS No 203-450-8). If the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P210-P403 (Table 3.1) or the S-phrases (2-)9-16 (Table 3.2) should apply. This note applies only to certain complex oil-derived substances in Part 3.

Classification according to Directive 67/548/EEC:

F+



**Extremely flammable**

**R phrases:**

**R 12** – Extremely flammable.

2.2. Label elements

Hydrocarbons, C3 - 4  
EU number 270-681-9

GHS02



**DANGER**

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**P381** – Eliminate all ignition sources if safe to do so.

Product is conform to EN 417, then labeling is simplified under the exemption in Annex 1, Section 1.3.2.1 of Regulation 1272/2008/EC.

2.3. Other hazards:

In case of prescribed storage and use conditions, there is no risk for the users of the product.

The following will provide information about other dangerous conditions which, although it does not define the classification of the substance, but impose the following hazards:

- In case of outflow, the leaking fluid evaporates quickly from the container, mixes with air and generates a risk of fire and/or explosion.
- It may create an explosive mixture with air, especially in closed areas or in emptied, but not cleaned vessels.
- The product is not considered as toxic, however the build-up of vapours in confined environments may cause asphyxia (due to oxygen deficiency).
- Vapours are invisible, however the dispersion of the fluid generates fog in presence of wet air. Its vapour density is higher than air and they disperse at the level of the ground.
- A significant heating of the vessel (for instance in case of fire) causes a huge increase in the volume and the pressure of the fluid, there is a danger of burst of its vessel. Contact with the fluid may cause severe skin/eye injuries due to frostbite.
- Combustion produces CO<sub>2</sub> (carbon dioxide), asphyxiating gas; in case of oxygen deficiency - due to insufficient aeration/ventilation/fume extraction - it may produce CO (carbon monoxide), a highly toxic gas.



### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substances:

Chemical name: Hydrocarbons, C3 - 4

Description:

Substance identified as LPG is derived from distillation and processing of mineral oil, during a separation from natural gas in a chemical processes. LPG is essentially a mix of propane (about 10%), butane (about 65%) and propylene (about 25%). The commercial composition may contain small amounts of other saturated hydrocarbons (ethane, isobutene and pentane) or unsaturated hydrocarbons (butenes) whose dangers do not differ from those typical of the substance indicated in section 2. It does not contain amounts of 1,3-butadiene over 0.1%.

If marketed for combustion, it contains a denaturant product (4 g for each 100 kg of LPG).

The LPG may as well contain an odorizing product, in order to enable its detection with concentrations lower than the L.I.E.. Gas odorization must be realized according to standards UNI 7133 (combustible gases) and UNI EN 589 (LPG for vehicles).

The concentrations of the above products, however, are lower than the prescribed limits.

Purity: 100 %

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of first aid measures:

##### IN CASE OF INGESTION:

Measures:

- Not applicable.

##### IN CASE OF INHALATION:

Measures:

- Gas phase:
- Remove the injured person from the polluted area.
- Immediately treat the injured person in case of symptoms due to vapours inhalation.
- In case of respiration difficulties, take the injured person into fresh air.

##### IN CASE OF SKIN CONTACT:

Measures:

- Fluid phase:
- Wash the affected part of the skin with water; remove clothing carefully and wash the affected part with plenty of water.
- Seek a doctor for the treatment of possible lesions caused by frostbite.

##### IN CASE OF EYE CONTACT:

Measures:

- Fluid phase:
- Wash with plenty of water with eyelids fully open; seek a specialist as soon as possible.

#### 4.2. Most important symptoms and effects, both acute and delayed:

No Data Available

#### 4.3. Indication of any immediate medical attention and special treatment needed:

No Data Available

### SECTION 5: FIREFIGHTING MEASURES

#### 5.1. Extinguishing media:

##### 5.1.1. Suitable extinguishing media:

Minor fires of LPG can be extinguished with fire extinguisher which are suitable for Class C , such as dry chemical or carbon dioxide. The use of chemical powder and carbon dioxide are also suitable for extinguishing fires involving the packaging materials.

##### 5.1.2. Unsuitable extinguishing media:

Water or foam.

#### 5.2. Special hazards arising from the substance or mixture:

The combustion of the substance produces carbon dioxide (CO<sub>2</sub>), asphyxiating gas. In the absence of oxygen, in case of insufficient ventilation, it can produce toxic fumes of carbon monoxide (CO).

#### 5.3. Advice for firefighters:

Do not extinguish a fire if you are not sure to be able to intercept the gas flow. An immediate outflow is preferable to a gas cloud, which disperses and may find a source of ignition. Use water to cool canisters and tanks hit by the fire to avoid overheating (with possibility of burst). Small fires can be extinguished with chemical dust extinguishers, or with carbon dioxide extinguishers. Significant amounts of burning outflows, when it is not possible to extinguish them by stopping the gas flow, shall be minimized and kept under control using spread jet water nozzles. Use nebulized or split jet water to dilute, below the explosion threshold, the concentration of gas clouds (if any).

Dangerous products of combustion: CO<sub>2</sub>, with danger of asphyxia in confined areas.

The special equipment for fire-fighting squads shall include helmets, visors, gloves as well as, in the most difficult cases, fire repellent suits and autorespirators.



## SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1. Personal precautions, protective equipment and emergency procedures:  
Do not use electric devices, unless they are safe to use (e.g.: explosion-proof);  
Stop the outflow source, if it is possible to do it without risk.  
Avoid liquid contact with skin and eyes.
- 6.1.1. Advices for non-emergency personnel:  
Keep unprotected people away, allow only well trained experts wearing suitable protective clothing to abide in the field of accident.  
In case of spills or accidental releases of substances, it is recommended:  
Wear antistatic clothing made of cotton or wool and antistatic footwear. Avoid synthetic fabrics.  
Remove ignition sources.  
Prevent the gas from flowing into areas under ground (e.g.: cellars, etc.), taking into account that vapours are heavier than air.  
Isolate the outflow area.  
Inform the competent authorities according to the emergency plans
- 6.1.2. For emergency responders:  
Wear antistatic clothing made of cotton or wool and antistatic footwear.  
Avoid synthetic fabrics.  
Protect eyes with glasses or face shield.  
Wear antistatic footwear.  
Protect your hands with gloves.
- 6.2. Environmental precautions:  
Disposal according to the local regulations.  
Do not allow to enter sewers/soil/surface or ground water. Notify the respective authorities in accordance with local law in the case of environmental pollution immediately.
- 6.3. Methods and material for containment and cleaning up:  
Ventilate the area.
- 6.4. Reference to other sections:  
For further and detailed information see section 8 and 13.

## SECTION 7: HANDLING AND STORAGE

- 7.1. Precautions for safe handling:  
Observe conventional hygiene precautions.  
Do not eat, drink and smoke in working areas.  
Wash hands after handling the product.  
Remove contaminated clothing before entering eating areas.  
Technical measures:  
Avoid dispersions into the atmosphere.  
Handle the product with closed circuit systems.  
Operate in well ventilated areas.  
Precautions against fire and explosion:  
Do not operate near ignition sources.  
Use non-sparking devices.  
Properly ground the equipment and avoid the build-up of electrostatic charges during transfer and bottling operations;
- 7.2. Conditions for safe storage, including any incompatibilities:  
Technical measures and storage condition:  
Deposits, bottling and transfer plants must be designed, realized and managed according to the specific technical safety rules for fire protection.  
In the areas classified according to the ATEX Directive, use safety electric equipment only, with Ex execution, group II G, temperature class not lower than T2.  
Fixed tanks, being pressurized equipment, must comply with the requirements of directive 97/23/CE (PED) and undergo periodical checks.  
Mobile vessels (canisters, drums, tank trucks, etc.) must comply with the requirements of the directive 2010/35/EC (TPED) and of ADR standards.  
Incompatible materials: oxidizing agents.  
Packaging material: no specific prescription.
- 7.3. Specific end use(s):  
Storage and handling of the product to be used for lighters, lighter recharges, aerosol and gas cartridges with their vessels must comply with ADR standards, specifically the packing instructions P003.



**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1. Control parameters:

Exposure limit values: none.

DNEL		Routes of exposure	Exposure frequency:	Remarks:
Worker	Consumer			
n.d.	n.d.	dermal	short term (acute) long term (repeated)	n.d.
n.d.	n.d.	inhalative	short term (acute) long term (repeated)	n.d.
n.d.	n.d.	oral	short term (acute) long term (repeated)	n.d.

PNEC			Exposure frequency:	Remarks:
Water	Soil	Air		
n.d.	n.d.	n.d.	short term (single use) long term (continuous)	n.d.
n.d.	n.d.	n.d.	short term (single use) long term (continuous)	n.d.
n.d.	n.d.	n.d.	short term (single use) long term (repeated)	n.d.

8.2. Exposure controls:

In case of a hazardous material with no controlled concentration limit it is the employer's duty to keep concentration levels down to a minimum achievable by existing scientific and technological means, where the hazardous substance poses no harm to workers.

8.2.1. Appropriate engineering controls:

In pursuance of work is proper foresight needed to avoid spilling onto clothes and floors and to avoid contact with eyes and skin. Ensure adequate ventilation.

8.2.2. Individual protection measures, such as personal protective equipment:

1. Eye/face protection: use safety goggles, visors, face shields to protect from fluid jets.
2. Skin protection:
  - a. Hand protection: use leather gloves and thermal insulation gloves with forearm protection for emergency situations.
  - b. Other: use complete antistatic clothes, covering both upper and lower limbs
3. Respiratory protection: in case of interventions in areas with gas presence, use autorespirators.
4. Thermal hazard: against the dangers of frostbite for jet of liquid, use goggles or face shield, gloves and clothing to cover full insulation of the trunk and limbs.

8.2.3. Environmental exposure controls:

No specific prescription.

**The requirements detailed in Section 8 assume skilled work under normal conditions and usage of the product for appropriate aims. If conditions differ from normal or work is carried out under extreme conditions an expert's advice should be sought out before deciding upon further protective measures.**

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

9.1. Information on basic physical and chemical properties:

Parameter	Test method:	Remarks:
1. <b>Appearance:</b>		colourless pressurized liquefied gas
2. <b>Odour:</b>		characteristic, if odourized for combustion or vehicles use
3. Odour threshold:		0.2 ÷ 0.4% with odorizer
4. pH value:		neutral
5. Melting point/ freezing point:		from - 187°C (propane), - 185°C (propylene) to - 138 °C (butane)
6. Initial boiling point/boiling range:		- 48°C (propylene), - 42°C (propane) to - 0,5 °C (butane)



7. Flash point:	- 107°C (propylene), - 104°C (propane) to - 60°C (butane)	
8. Evaporation rate:	no data available	
9. Flammability:	no data available	
10. Upper/lower flammability or explosive limits:	no data available	
11. Vapour pressure:	10,2 (propylene at 20°C), 7,5 (propane) to 1,8 (butane)	at 15°C, in bars, ASTM D 1267
12. Relative density:	From 1,5 (propane) to 2,0 (butane)	relative to air – gas phase
13. Solubility(ies):	soluble in methanol, ethanol, ether in water: marginal solubility	
14. Partition coefficient: n-octanol/water:	no data available	
15. Self-ignition temperature:	from 468°C (propane), 455°C (propylene) to 405;C (butane)	
16. Degradation temperature:	no data available	
17. Viscosity:	dynamic viscosity in fluid phase: 11 x 10 <sup>-5</sup> Pa x s (propane) to 17 x 10 <sup>-5</sup> Pa x s (butane)	Technical Data Book – API 2 <sup>nd</sup> edition 1970
18. Explosive properties:	no data available	
19. Oxidizing properties:	no data available	

9.2. **Other information:**

Mass volume of the fluid at 15° C, in Kg/l: 0.508 (propane) to 0.584 (butane), (method ASTM D 1657)

Mass volume of steam at 15° C, in Kg/m<sup>3</sup>: 1,76 (propylene), 1.86 (propane) to 2.45 (butane)

Critical point: 92°C (propylene), 96,5 °C (propane) to 151°C (butane)

Lower and higher flash point threshold in air: lower: 1,8 ± 2,27 V %, upper: 8,41 ± 11 V %

Materials suitability: it melts fat and attacks natural rubber. Not corrosive for metallic materials.

Thermal conductivity in fluid phase at 15°C in W/m x °C: 13 x 10<sup>-2</sup> to 22 x 10<sup>-2</sup> (Technical Data Book – API 2<sup>nd</sup> edition 1970)

Electric conductivity in fluid phase (at 0°C + 20°C) in Ω<sup>-1</sup> x m<sup>-1</sup>: from 0,1 ± 0,5 x 10<sup>-12</sup> (propane) to 1 ± 5 x 10<sup>-12</sup> (butane) (Encyclopédia des gaz - ELSEVIER 1976)

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. **Reactivity:**  
May form explosive mixture with air.
- 10.2. **Chemical stability:**  
No instability condition.
- 10.3. **Possibility of hazardous reactions:**  
No condition giving rise to dangerous reactions.
- 10.4. **Conditions to avoid:**  
Avoid significant heating of product and vessels. Avoid quick decompression of the vessels since it generates significant cooling, with temperatures well below 0°C.
- 10.5. **Incompatible materials:**  
Oxidizing agents.
- 10.6. **Hazardous decomposition products:**  
In case of trigger, it burns with exothermal reaction and production of carbon oxides (CO<sub>2</sub>, CO).  
No possibility of degradation with formation of unstable products.  
No stabilizer is required.

## SECTION 11. TOXICOLOGICAL INFORMATION

- 11.1. **Information on toxicological effects:**  
Acute toxicity: none known.  
Skin corrosion/irritation: none known.  
Serious eye damage/eye irritation: none known.  
Respiratory or skin sensitisation: no evidence.  
Germ cell mutagenicity: no evidence.  
Carcinogenicity: no evidence.  
Reproduction toxicity: none known.  
STOT-single exposure: none known.  
STOT-repeated exposure: none known.



Aspiration hazard: none known.

- 11.1.1. For substances subject to registration, brief summaries of the information derived from the test conducted:  
None known.
- 11.1.2. Relevant toxicological properties of the hazardous substances:  
None known.
- 11.1.3. Information on likely routes of exposure:  
Ingestion, inhalation, skin and eye contact.
- 11.1.4. Symptoms related to the physical, chemical and toxicological characteristics:  
Slightly narcotic product, in high concentrations can cause asphyxia. The quick evaporation of the product in fluid phase in contact with eyes and skin causes burns due to cold.
- 11.1.5. Delayed and immediate effects as well as chronic effects from short and long-term exposure:  
None known.
- 11.1.6. Interactive effects:  
None known.
- 11.1.7. Absence of specific data:  
No data available.
- 11.1.8. Other information:  
None known.

## SECTION 12: ECOLOGICAL INFORMATION

- 12.1. Toxicity:  
There are no data of ecotoxicity and biodegradability due to the high volatility of the product: it does not persist in aqueous means therefore it is not possible to perform the tests.  
The release of big quantities of the product in the environment can increase the air content in volatile organic compounds.  
Therefore it is necessary to avoid outflows by carrying out the handling in a closed cycle  
The product is classified in danger class "0" – generally non-polluting waters (sources BASF and HUELS – IUCLID, Existing chemicals, 1996)
- 12.2. Persistence and degradability:  
No data available.
- 12.3. Bioaccumulative potential:  
No data available.
- 12.4. Mobility in soil  
Immiscible in water.
- 12.5. Results of PBT and vPvB assessment  
No data available.
- 12.6. Other adverse effects:  
Ozone depletion potential: 0

## SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1. Waste treatment methods:  
Disposal according to the local regulations.
- 13.1.1. Information regarding the disposal of the product:  
Take all measures necessary to avoid product dispersion into the atmosphere.  
Do not dispose of the product in sewers and in the environment.  
In case of product disposal due to emergency, we recommend burning supervised by qualified technician.  
During the disposal of the product, its residue and its packaging the national and local prescriptions should be observed.  
The EWC codes indicated below are only recommendations, but they may have to be changed due to special circumstances, in such cases new classification may be needed.
- 13.1.2. Information regarding the disposal of the packaging:  
No specific prescription. Disposal according to the national/local regulations.
- 13.1.3. Physical/chemical properties that may affect waste treatment options shall be specified:  
None known.
- 13.1.4. Sewage disposal:  
None known.
- 13.1.5. Special precautions for any recommended waste treatment:  
No data available.



#### SECTION 14: TRANSPORT INFORMATION

- 14.1. UN number:  
2037
- 14.2. UN proper shipping name:  
RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable
- 14.3. Transport hazard class(es):  
2  
Classification code: 5F  
Label: 2.1  
EmS: F-D, S-U  
MFAG: no. 620
- 14.4. Packaging group:  
None
- 14.5. Environmental hazard:  
None known.
- 14.6. Special precautions for user:  
Before starting transport of gas cylinders: ensure that containers are firmly secured, ensure that the valve is close tight, make sure the cap is properly applied to the output of the tap.
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:  
Not applicable.

#### SECTION 15: REGULATORY INFORMATION

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:  
REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
- COMMISSION REGULATION (EC) No 790/2009 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
- REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 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: no data available.

#### SECTION 16: OTHER INFORMATION

Information regarding the revision of the safety data sheet: none.

Full text of the abbreviations in the safety data sheet:

DNEL: Derived No Effect Level. PNEC: Predicted No Effect Concentration. CMR effects: Carcinogenicity, Mutagenicity and reproduction toxicity. PBT: Persistent, bioaccumulative and toxic. vPvB: very persistent and very bioaccumulative. n.d.: not defined. n.a.: not applicable.

Data sources: no data available.

Relevant R-Phrases (number and full text) of Section 2 and 3:

**R 12** – Extremely flammable.

Relevant H-Phrases (number and full text) of Section 2 and 3:

**H220** – Extremely flammable gas.

**H280** – Contains gas under pressure; may explode if heated.

Training instructions: n.d.

This safety data sheet had been prepared on the basis of information provided by the manufacturer/supplier and conform to the relevant regulations. The information, data and recommendations contained herein are provided in good faith, obtained from reliable sources and believed to be true and accurate as of the date issued; however, no representation is made as to the comprehensiveness of the information. The SDS shall be used only as a guide for handling the product; in the course of handling and using the product other considerations may arise or be required. Users are cautioned to determine the appropriateness and applicability of the above information to their particular circumstances and purposes and assume all risk associated with the use of this product. It is the responsibility of the user to fully comply with local, national and international regulations concerning the use of this product.