Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Material Name : **LPG (<0.1% butadiene)**

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use : Used as a domestic, commercial, industrial and automotive fuel, a feedstock in chemical processes.

Uses Advised Against : This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.

1.3 Details of the supplier of the substance or mixture

Manufacturer/Supplier : **SA Antargaz Belgium NV**
De Kleetlaan, 5A
B- - 1831 Diegem

Telephone : +32 (0) 2 246 00 00
Internet : www.antargaz.be

1.4 Emergency Telephone Number

: +32 (0) 800 246 46 (24/7)
or
+32 (0) 2 216 74 69 (24/7)

1.5 Other Information

: This product is exempt from the obligation to register under REACH in accordance with Article 2(7)(b).

2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Regulation (EC) No 1272/2008 (CLP)	
Hazard classes / Hazard categories	**Hazard Statement**
Flammable Gas, Category 1	H220
Gases under pressure	H280

67/548/EEC or 1999/45/EC	
Hazard Characteristics	**R-phrase(s)**
Extremely flammable.	R12

2.2 Label Elements

Labeling according to Regulation (EC) No 1272/2008

Symbol(s) :

Signal Words : Danger

CLP Hazard Statements :

PHYSICAL HAZARDS:
H220: Extremely flammable gas.
H280: Contains gas under pressure; may explode if heated.

HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.

ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

CLP Precautionary statements

Prevention :
P102: Keep out of reach of children.
P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P243: Take precautionary measures against static discharge.

Response :
P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381: Eliminate all ignition sources if safe to do so.

Storage : P403: Store in a well-ventilated place.

2.3 Other Hazards

Health Hazards : Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache and nausea.
High gas concentrations will displace available oxygen from the air; unconsciousness and death may occur suddenly from lack of oxygen.
Exposure to rapidly expanding gases may cause frost burns to eyes and/or skin.

Safety Hazards : Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

CAS No. : 68476-85-7

3.2 Mixtures

Preparation Description : 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). It may also contain one or more of the following additives: odourants (usually ethyl mercaptan), anti-icing agents. 1,3-butadiene, classified as a Category 1 carcinogen and Category 2 mutagen, may be present at concentrations of less than 0.1%(m/m).

Hazardous Components

Classification of components according to Regulation (EC) No 1272/2008

Chemical Name	CAS No.	EINECS	REACH Registration No.	Conc.
Petroleum gases, liquefied	68476-85-7	270-704-2	Exempt	<= 100,00%

Chemical Name	Hazard Class & Category	Hazard Statement
Petroleum gases, liquefied	Flam. Gas, 1; Press. Gas, ;	H220; H280;

Additional Information : Refer to chapter 16 for full text of H-phrases.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

Inhalation : Remove to fresh air. If breathing but unconscious, place in the recovery position. If breathing has stopped, apply artificial respiration. If heartbeat absent, give external cardiac compression. Monitor breathing and pulse. Seek urgent medical advice.

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. Continue rinsing. Flush eye with copious quantities of water.

Ingestion : In the unlikely event of ingestion, obtain medical attention immediately.

4.2 Most important symptoms/effects, acute & delayed : High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued exposure may result in unconsciousness and/or death.

4.3 Indication of immediate medical attention and special treatment needed : Treat symptomatically.
Administer oxygen if necessary.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

5.1 Extinguishing Media	:	Shut off supply. If not possible and no risk to surroundings, let the fire burn itself out. Use foam, water fog for major fires. Use dry chemical powder, carbon dioxide, sand or earth for minor fires.
Unsuitable Extinguishing Media	:	Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.
5.2 Special hazards arising from substance or mixture	:	Hazardous combustion products may include: Carbon monoxide. Unidentified organic and inorganic compounds. Sustained fire attack on vessels may result in a Boiling Liquid Expanding Vapour Explosion (BLEVE). Contents are under pressure and can explode when exposed to heat or flames. The vapour is heavier than air, spreads along the ground and distant ignition is possible.
5.3 Advice for fire-fighters	:	Wear full protective clothing and self-contained breathing apparatus.
Additional Advice	:	Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Evacuate the area of all non-essential personnel. Ventilate contaminated area thoroughly. Avoid contact with spilled or released material. Immediately remove all contaminated clothing. Do not attempt to do so if clothing is adhering to skin. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures	:	Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter. Use appropriate containment to avoid environmental contamination. Test atmosphere for flammable gas concentrations to ensure safe working conditions before personnel are allowed to enter the area.
6.2 Environmental Precautions	:	Use appropriate containment to avoid environmental contamination.
6.3 Methods and Material for Containment and Clean Up	:	Allow to evaporate. Attempt to disperse the vapour or to direct its flow to a safe location, for example by using fog sprays. Otherwise treat as for small spillage.
Additional Advice	:	Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapour may form an explosive mixture with air. Risk of explosion. Inform the

emergency services if product enters surface water drains.

7. HANDLING AND STORAGE

General Precautions	:	Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Air-dry contaminated clothing in a well-ventilated area before laundering. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
7.1 Precautions for Safe Handling	:	This product can create a low temperature exposure hazard when released as a liquid. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Avoid prolonged or repeated contact with skin. Electrostatic charges may be generated during handling. Electrostatic discharge may cause fire. Earth all equipment.
7.2 Conditions for safe storage, including any incompatibilities	:	Store only in purpose-designed, appropriately labeled pressure vessels or cylinders. Must be stored in a well-ventilated area, away from ignition sources and other sources of heat. Do not store near cylinders containing compressed oxygen or other strong oxidizers.
7.3 Specific End Uses	:	Not applicable
Additional Information	:	This product is intended for use in closed systems only. Ensure that all local regulations regarding handling and storage facilities are followed.
Product Transfer	:	Do not use compressed air for filling, discharging or handling. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Delivery lines may become cold enough to present a cold burns hazard.
Recommended Materials	:	For containers and container linings, use materials specifically approved for use with this product. Examples of suitable materials are: PA-11, PEEK, PVDF, PTFE, GRE (Epoxy), GRVE (vinyl ester), Viton (FKM), type F and GB, Neoprene (CR).
Unsuitable Materials	:	Some forms of cast iron. Examples of materials to avoid are: ABS, polymethyl methacrylate (PMMA), polyethylene (PE / HDPE), polypropylene (PP), PVC, natural rubber (NR), Nitrile (NBR) ethylene propylene rubber (EPDM), Butyl (IIR), Hypalon

		(CSM), polystyrene, polyvinyl chloride (PVC), polyisobutylene. For containers and container linings, aluminium should not be used if there is a risk of caustic contamination of the product.
Container Advice	:	Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

8.1 Control Parameters

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Petroleum gases, liquefied	OEL (BE)	TWA	1.000 ppm	1.826 mg/m3	
	ACGIH	TWA	1.000 ppm		

Biological Exposure Index (BEI)

No biological limit allocated.

Derived No Effect Levels (DNEL)	:	Not applicable.
PNEC related information	:	Exposure assessments have not been presented for the environment therefore PNEC values not required.

8.2 Exposure Controls

General Information	:	The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Use sealed systems as far as possible. Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Local exhaust ventilation is recommended.

Occupational Exposure Controls

Personal Protective Equipment	:	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Eye Protection	:	Chemical splash goggles (gas-tight monogoggles) and face shield with chin guard. Approved to EU Standard EN166.
Hand Protection	:	Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, and dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: Neoprene rubber. Nitrile rubber. If contact with liquefied product is possible or anticipated, gloves should be thermally insulated to prevent cold burns.
Body protection	:	Chemical and cold resistant gloves/gauntlets, boots, and apron.
Respiratory Protection	:	If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours [boiling point <65 °C (149 °F)]
Thermal Hazards	:	When handling cold material that can cause frost burns, wear heat resistant gloves, safety hat and visor, cold resistant overalls (with cuffs over gloves and legs over boots) and heavy duty boots e.g. leather for cold resistance.
Monitoring Methods	:	Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls.

Environmental Exposure Controls

Environmental exposure	:	Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

control measures

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Colourless. Liquid under pressure.
Odour	:	Distinctive and unpleasant if stenched, odourless if unstenched.
pH	:	Not applicable
Initial Boiling Point and Boiling Range	:	Typical -40 - -0,5 °C / -40 – 31,1 °F 1.013 hPa
Freezing Point	:	Typical -187,6 - -138,3 °C / -305,7 - -216,9 °F
Flash point	:	Typical -104 - -60 °C / -155 - -76 °F
Upper / lower Flammability or Explosion limits	:	Typical 1,4 - 10,9 %(V)
Auto-ignition temperature	:	> 287 °C / 549 °F
Vapour pressure	:	ca. 345 - 980 kPa at 20 °C / 68 °F
Density	:	Typical 500 - 580 kg/m3 at 15 °C / 59 °F
Water solubility	:	Negligible.
Solubility in other solvents	:	Data not available
n-octanol/water partition coefficient (log Pow)	:	ca. 2,3 - 2,8
Dynamic viscosity	:	Not applicable.
Kinematic viscosity	:	Not applicable.
Vapour density (air=1)	:	> 1,5 at 15 °C / 59 °F
Evaporation rate (nBuAc=1)	:	Data not available
Flammability	:	Extremely flammable.

9.2 Other Information

Other Information	:	Not applicable.

10. STABILITY AND REACTIVITY

10.1 Reactivity	:	No, product will not become self-reactive.
10.2 Chemical Stability	:	Stable.
10.3 Possibility of Hazardous Reactions	:	No, hazardous, exothermic polymerization cannot occur.
10.4 Conditions to Avoid	:	Heat, open flames, sparks and flammable atmospheres.
10.5 Incompatible Materials	:	Strong oxidising agents.

10.6 Hazardous Decomposition Products	:	Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects

Basis for Assessment	:	Information given is based on product data, a knowledge of the components and the toxicology of similar products.
Likely Routes of Exposure	:	Inhalation is the primary route of exposure although exposure may occur through skin or eye contact.
Acute Oral Toxicity	:	Not applicable.
Acute Dermal Toxicity	:	Not applicable.
Acute Inhalation Toxicity	:	Low toxicity: LC50 >20 mg/l / 4,00 h, Rat
Skin Corrosion/Irritation	:	Not irritating to skin.
Serious Eye Damage/Irritation	:	Essentially non-irritating to eyes.
Respiratory Irritation	:	Inhalation of vapours or mists may cause irritation to the respiratory system.
Respiratory or Skin Sensitisation	:	Not expected to be a sensitiser.
Aspiration Hazard	:	Not considered an aspiration hazard.
Germ Cell Mutagenicity	:	No evidence of mutagenic activity.
Carcinogenicity	:	Not expected to be carcinogenic.
Reproductive and Developmental Toxicity	:	Not expected to impair fertility. Not a developmental toxicant.
Specific target organ toxicity - single exposure	:	High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.
Specific target organ toxicity - repeated exposure	:	Low systemic toxicity on repeated exposure.
Additional Information	:	Rapid release of gases which are liquids under pressure may cause frost burns of exposed tissues (skin, eye) due to evaporative cooling. High gas concentrations will displace available oxygen from the air; unconsciousness and death may occur suddenly from lack of oxygen. Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest.

12. ECOLOGICAL INFORMATION

Basis for Assessment	:	Information given is based on product testing, and/or similar products, and/or components.

12.1 Toxicity **Acute Toxicity**	:	Physical properties indicate that petroleum gases will rapidly volatilise from the aquatic environment and that acute and chronic effects would not be observed in practice.
12.2 Persistence and degradability	:	Expected to be readily biodegradable. Oxidises rapidly by photo-chemical reactions in air.
12.3 Bioaccumulative Potential	:	Not expected to bioaccumulate significantly.
12.4 Mobility	:	Because of their extreme volatility, air is the only environmental compartment that hydrocarbon gases will be found.
12.5 Result of the PBT and vPvB assessment	:	The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.
12.6 Other Adverse Effects	:	In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Material Disposal	:	It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Do not dispose into the environment, in drains or in water courses. Given the nature and uses of this product, the need for

		disposal seldom arises. If necessary, dispose by controlled combustion in purpose-designed equipment. If this is not possible, contact the supplier.
Container Disposal	:	Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not pollute the soil, water or environment with the waste container. Return part-used or empty cylinders to the supplier. For tanks seek specialist advice from suppliers. Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.
Local Legislation	:	Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with. EU Waste Disposal Code (EWC): 16 05 04 gases in pressure containers (including halons) containing dangerous substances.

14. TRANSPORT INFORMATION

Land transport (ADR/RID):

ADR

14.1 UN No.	:	1965
14.2 UN Proper Shipping Name	:	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (LPG)
14.3 Transport Hazard Class	:	2
Danger label (primary risk)	:	2.1
14.5 Environmental Hazard	:	No
14.6 Special Precautions for user	:	Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

RID

14.1 UN No.	:	1965
14.2 UN Proper Shipping Name	:	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (LPG)
14.3 Transport Hazard Class	:	2
Danger label (primary risk)	:	2.1
14.5 Environmental Hazard	:	No
14.6 Special Precautions for user	:	Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Inland waterways transport (ADN):

14.1 UN No.	:	1965
14.2 UN Proper Shipping Name	:	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (LPG)
14.3 Transport Hazard Class	:	2
Danger label (primary risk)	:	2.1
14.5 Environmental Hazard	:	No
14.6 Special Precautions for user	:	Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Sea transport (IMDG Code):

14.1 UN No.	:	UN 1965
14.2 UN Proper Shipping Name	:	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.
Technical name	:	(LPG)
14.3 Transport Hazard Class	:	2.1
14.5 Marine pollutant	:	No
14.6 Special Precautions for user	:	Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Air transport (IATA):

14.1 UN No.	:	1965
14.2 UN Proper Shipping Name	:	Hydrocarbon gas mixture, liquefied, n.o.s.
Technical name	:	(LPG)
14.3 Transport Hazard Class	:	2.1
14.5 Environmental Hazard	:	No
14.6 Special Precautions for user	:	Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Sea (Annex II of MARPOL 73/78 and the IBC code)

Pollution Category	:	Not applicable.
Ship Type	:	Not applicable.

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Product Name	:	Not applicable.
Special Precaution	:	Not applicable.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

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

Other regulatory Information

15.2 Chemical Safety Assessment	:	No chemical safety assessment has been performed for this substance.

16. OTHER INFORMATION

R-phrase(s)

R12	Extremely flammable.

CLP Hazard Statements

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.

Identified Uses according to the Use Descriptor System

Recommended Restrictions on Use (Advice Against)	:	This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.
Additional Information	:	This document contains important information to ensure the safe storage, handling and use of this product. The information in this document should be brought to the attention of the person in your organisation responsible for advising on safety matters.

Other Information

MSDS Distribution	:	The information in this document should be made available to all who may handle the product.
MSDS Version Number	:	2.0
MSDS Effective Date	:	01.01.2014

Safety Data Sheet

MSDS Revisions	:	A vertical bar (|) in the left margin indicates an amendment from the previous version.
MSDS Regulation	:	Regulation 1272/2008/EC
Disclaimer	:	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.